



SEQUENCE LISTING

<110> ROTH, CHARLES W.
BREY, PAUL T.
HOLM, INGE
GRAILLES, MARINE
RZHETSKY, ANDREY

<120> MULTIDRUG RESISTANCE PROTEINS IN DROSOPHILA AND
ANOPHELES

<130> 03495.0294-01000

<140> 10/807,466

<141> 2004-03-24

<150> 10/667,891

<151> 2003-09-23

<150> 60/413,469

<151> 2002-09-26

<160> 139

<170> PatentIn Ver. 3.2

<210> 1

<211> 1548

<212> PRT

<213> Drosophila melanogaster

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Pro	Cys	Phe	Glu	Gln	Thr	Ala	Leu	Val	Trp	Thr	Pro	Cys	Ala	Phe	Tyr
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Arg	Asn	Ile	Pro	Trp	Asn	Lys	Leu	Asn	Val	Ser	Lys	Ala	Leu	Val	Asn
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Lys	Lys	Gly	Gly	Asp	Ser	Glu	Leu	Pro	Leu	Tyr	Asp	Leu	Asp	Val	Trp
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Gly	Pro	Ile	Ile	Lys	Phe	Ala	Thr	Phe	Leu	Leu	Leu	Phe	Ile	Phe	Ile
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Pro	Leu	Asn	Arg	Lys	Tyr	Gly	Val	Gln	Thr	Thr	Gly	Cys	Gln	Phe	Ile
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Val	Arg	Leu	Asp	Ala	Glu	Arg	Gln	Lys	Ile	Leu	Asn	Ser	Gln	Gln	Pro	165	170	175	
Ser	Glu	Gln	Asp	Phe	Ser	Trp	Glu	Glu	Tyr	Gln	Phe	Val	Ser	Phe	Phe	180	185	190	
Ile	Phe	Phe	Thr	Phe	Thr	Ser	Ile	Met	Leu	Ile	Leu	Asn	Cys	Phe	Ala	195	200	205	
Asp	Gly	Met	Pro	Arg	Gln	Thr	Lys	Tyr	Gln	Arg	Gly	Glu	Asn	Glu	Ile	210	215	220	
Pro	Glu	Leu	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Tyr	Gln	Trp	Phe	225	230	235	240
Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp	245	250	255	
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile	260	265	270	
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys	275	280	285	
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe	290	295	300	
Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser	305	310	315	320
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly	325	330	335	
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Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro	355	360	365	
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala	370	375	380	
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val	385	390	395	400
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala	405	410	415	
Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile	420	425	430	
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr	435	440	445	

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 Lys Thr Tyr Gln Ile Arg Gln Met Lys Tyr Lys Asp Glu Arg Val Lys
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 Ser Val Val Gln Ala Phe Leu Gly Glu Met Glu Lys Leu Ala Gly Val
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Ile Asp Ile Leu Ser Ala Gly Asp Leu Thr Glu Ile Gly Glu Lys Gly
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 Lys Gly Ile Leu Ala Arg Lys Ser Arg Val Leu Val Thr His Gly Val
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 Thr Phe Leu Pro Gln Val Asp Ser Ile Tyr Val Ile Lys Met Gly Glu
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 Ile Ser Glu Ser Gly Thr Phe Asp Gln Leu Val Lys Asn Lys Gly Ala
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 Glu Glu Leu Asn Gln Ile Lys Arg Gln Ile Ser Ser Thr Ala Asp Val
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 Pro Glu Leu Leu Gly Thr Val Glu Lys Ala Ile Lys Leu Ala Arg Thr
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 Glu Ser Leu Ser Asp Ser Ile Ser Val Thr Ser Ala Asp Ser Leu Met
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 Gly Gly Gly Gly Ser Leu Arg Arg Arg Thr Lys Arg Gln Asp Ser His
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 Asp Ser Val Ala Ser Ala Ala Ser Leu Lys Lys Lys Gln Glu Val Glu
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 Gly Lys Leu Ile Glu Thr Glu Lys Ser Gln Thr Gly Gly Val Glu Phe
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 Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu
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 35 40 45
 Ser Ile Phe Ser Ala Phe Leu Val Leu Val Thr Leu Ala Gly Val Val
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 Val Ala Ala Phe Arg Leu Val Asp Asp Ser Val Ala Val Trp Arg Asp
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Trp	Tyr	Asp	Phe	Met	His	Leu	Met	Leu	Ala	Phe	Ala	Trp	Leu	Cys	Ala	
				130									140			
Cys	Gly	Ile	Arg	Ser	Tyr	Ser	Gly	Gly	Gly	His	Asp	Ser	Ser	Thr	Gly	
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Ser	Asn	Thr	Pro	Arg	Lys	Pro	Asn	Phe	Ile	Arg	Gly	Leu	Phe	Phe	Ser	
				165									170			
Trp	Met	Asp	Ser	Thr	Tyr	Arg	Glu	Ala	His	Arg	Gly	Ser	Val	Ala	Phe	
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Tyr	Gln	Gly	Thr	Leu	Phe	Gln	Gly	Thr	Leu	Pro	Glu	Asp	Arg	Arg	Cys	
				195									200			
Glu	Gln	Leu	Leu	Glu	Leu	Tyr	Glu	Lys	Ala	Asn	Ala	Arg	Arg	Gly	Tyr	
				210									220			
Thr	Ala	Val	Asp	Asp	Gly	Ser	Gly	Arg	Met	Glu	Ser	Glu	Leu	Cys	Arg	
				225									230			
Phe	Thr	Ile	Gly	Lys	Leu	Leu	Ser	Pro	Phe	Arg	Gly	Glu	Ile	Ile	Leu	
				245									250			
Ala	Gly	Leu	Asn	Arg	Phe	Val	Leu	Ile	Ser	Leu	Phe	Phe	Leu	Cys	Pro	
				260									265			
Tyr	Leu	Leu	Arg	Leu	Leu	Leu	Glu	Glu	Asn	Gln	Pro	Arg	Met	Tyr	Gln	
				275									280			
Lys	Trp	Ile	Val	Thr	Ala	Leu	Phe	Asp	Ala	Ser	Thr	Ile	Ile	Ala	Ile	
				290									295			
Leu	Asn	Thr	His	Tyr	Gln	His	Thr	Thr	Gln	Asp	Ile	Gly	Leu	Arg	Ile	
				305									310			
Arg	Ser	Ile	Leu	Met	Gly	Ala	Ile	Tyr	Arg	Ser	Ile	Leu	His	Asp	Gly	
				325									330			
Ile	Thr	Ser	Asn	Ala	Ser	Ser	Asp	Thr	Leu	Thr	Ser	Asp	Thr	Ala	Leu	
				340									345			
Phe	Val	Pro	Phe	Ile	Gln	Asn	Leu	His	Met	Met	Trp	Ser	Ala	Pro	Leu	
				355									360			
Ile	Ile	Leu	Ile	Thr	Phe	Val	Ala	Leu	Trp	Val	Gly	Val	Leu	Gly	Pro	
				370									375			

Ile Gly Thr Val Gly	Leu Ala Ile Ile Val	Ala Val Ile Ala Ile Thr	385	390	395	400
Arg Lys Leu Ala Lys	Lys Ile Ala Ala Gln Glu	Lys His Ile Thr Ala	405	410		415
His Ser Asn Asp Arg	Val Arg Leu Thr Thr	Ala Ser Ile Glu Gln Met	420	425	430	
Gln Gln Ile Lys Ser Asp	Leu Met Glu Pro Phe Phe	Glu Gln Arg Ile	435	440	445	
Gly Glu His Arg Arg	Ala Glu Leu Ser His Met	Cys Thr Tyr Ile Leu	450	455	460	
Tyr Asp Ala Leu Lys	Tyr Leu Leu Ser Ile	Ala Thr Pro Met Ile Val	465	470	475	480
Ala Cys Gly Thr Phe	Leu Phe Met Tyr Val	Val Gly Ser Gly Ala Leu	485	490		495
Leu Thr Val Gln Ser Met	Phe Val Ala Ile Ala	Leu Phe Gly Leu Thr	500	505	510	
Arg Tyr Pro Leu Ser Glu	Leu Pro Asn Leu Met	Ala Asn Trp Gly Thr	515	520	525	
Ile Asn Val Lys Leu Gln	Val Ile Asn Glu Val	Val Cys Ser Gly Lys	530	535	540	
Gln Arg Lys Ser Ser	Gly Lys Met Pro Gln	Asn Gly Ser Ser Thr Gly	545	550	555	560
Gly Ala Gly Arg Gly	Ser Phe Glu Lys Met	Gln Glu Val Val His Thr	565	570		575
Phe Val Asp Gln Leu Glu	Asp Ser Ile Ala Asp	Thr Ser Arg Ala Glu	580	585	590	
Val Leu Arg Ile Glu Arg	Ala Lys Phe Ser Thr	Glu Lys Asn Thr Ile	595	600	605	
Leu Arg Gly Ile Asn Leu	Thr Leu Arg Glu Gly	Thr Phe Ile Gly Val	610	615	620	
Ser Gly Thr His Gly	Ser Gly Lys Thr Ser	Leu Leu Arg Ala Met Ile	625	630	635	640
Gly Arg Leu Gln Arg	Thr Gly Gly Thr Ser	Thr Ile Ala Trp Asn Arg	645	650	655	
Val Ala Tyr Cys Pro Gln	Thr Pro Trp Ile His	Ser Gly Thr Ile Arg	660	665	670	
Ser Asn Ile Leu Phe Gly	Gln Glu Tyr Glu Lys	Ser Arg Tyr Glu Glu	675	680	685	

Val	Leu	Arg	Ala	Cys	Cys	Leu	Glu	Glu	Asp	Leu	Lys	Thr	Phe	Pro	Asp	690	695	700
Tyr	Asp	Glu	Arg	Val	Val	Ser	Glu	Gly	Gly	His	Ser	Leu	Ser	Gly	Gly	705	710	715
Gln	Ala	Arg	Arg	Val	Ser	Leu	Ala	Arg	Ala	Val	Tyr	Arg	His	Ala	Asp	725	730	735
Val	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Arg	Ser	Leu	Asp	Pro	Asn	Val	Ala	740	745	750
Arg	Lys	Val	Phe	Glu	Gly	Val	Phe	His	Arg	Gln	His	Gly	Leu	Leu	Ala	755	760	765
Gly	Cys	Thr	Cys	Val	Phe	Ile	Ser	His	Asp	Pro	Glu	His	Leu	Ser	Ile	770	775	780
Ala	Asp	Lys	Val	Leu	Val	Met	Ala	Gly	Gly	Thr	Ile	Glu	Lys	Val	Leu	785	790	795
Lys	Pro	Ala	Glu	Val	Ser	Val	Glu	Leu	Leu	Gly	Gln	Leu	Asn	Gly	Ala	805	810	815
Glu	Asp	Glu	Pro	Glu	Gln	Glu	Glu	Lys	Ala	Pro	Lys	Ala	Asp	Gln	Gln	820	825	830
Asn	Lys	Lys	Arg	Ala	Arg	Lys	Ala	Gln	Pro	Lys	Gly	Thr	Asp	His	Gly	835	840	845
Glu	Gly	Asn	Val	Ser	Leu	Gly	Leu	Tyr	Val	Thr	Phe	Ala	Arg	Met	Leu	850	855	860
Lys	Arg	Arg	Tyr	Cys	Val	Gly	Ala	Leu	Cys	Phe	Glu	Ser	Thr	Val	Thr	865	870	875
Ala	Leu	Asp	Ile	Val	Ile	Ile	Thr	Leu	Leu	Ala	Gln	Trp	Ala	Ala	Ser	885	890	895
Asp	Lys	Gln	Thr	Ser	Gly	Ala	Leu	Leu	His	Thr	Thr	Trp	Ile	Leu	Cys	900	905	910
Val	Trp	Val	Leu	Leu	Ile	Phe	Leu	Lys	Thr	Ala	Ile	Ile	His	Trp	Ala	915	920	925
Gly	Leu	Ser	Leu	Ser	Lys	Arg	Val	His	Ser	Gln	Met	Leu	Ala	Thr	Ile	930	935	940
Leu	Arg	Gln	Pro	Met	Glu	Phe	Phe	Asp	Leu	Asn	Asp	Ser	Gly	Val	Ile	945	950	955
Val	Asn	Arg	Phe	Ser	Asn	Asp	Leu	Lys	Val	Val	Asp	Lys	Thr	Ile	Ile	965	970	975
Thr	Ser	Val	Arg	Ser	Val	Leu	Ser	Ala	Ser	Phe	Ser	Val	Leu	Gly	Thr	980	985	990

Leu Met Leu Phe Val Tyr Lys Leu His Ser Lys Leu Leu Leu Phe Val
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 Leu Ser Tyr His Leu Gln Val Ala Arg Thr Leu Lys Arg Phe Glu Ala
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 Ser Ser Arg Ser Pro Ile Ile Leu Gln Tyr Asn Glu Thr Ile Gln Gly
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 Phe Phe Glu Arg Val Asp Thr His Gln Asn Tyr Ile Tyr His Asn Arg
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 Phe Ala Asn Arg Trp Ile Gly Ile Arg Leu Glu Phe Ile Gly Ala Ile
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 Gly Phe Ala Phe Val Gly Ile Ile Val Ser Tyr Val Leu Arg Leu Ile
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 Pro Ser Leu Asn Ser Leu Leu Leu Ala Leu Gly Ala Leu Glu Glu Asn
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 His Pro Val Leu Gly Pro Ile Ile Tyr Arg Asp Phe Ser Leu Thr His
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 Ala Asp Gly Ser Thr Val Leu His Asn Val Thr Leu Thr Ile Ala Ala
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 Gly Glu Lys Leu Gly Ile Val Gly Arg Thr Gly Ser Gly Lys Ser Ser
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 Phe Ile Gly Thr Leu Phe Arg Phe Tyr Pro Lys His Thr Thr Gly Tyr
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 Arg Gly Glu Leu Thr Leu Val Pro Gln Ser Thr Ser Leu Phe Ser Gly
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 Val Val Gln Asn Phe Ile Asp Pro Arg Asn Gly His Thr Asp Glu Glu
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Leu Ile Arg Cys Leu Arg Glu Cys Gly Leu Gly Asn Val His Leu Ala
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Thr Pro Leu Glu Asn Leu Ser Val Gly Gln Cys Gln Leu Leu Cys Leu
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Val Arg Gly Phe Leu Arg Lys Lys Pro Ile Ile Ile Leu Asp Glu Ala
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Thr Ser Ala Leu Asp Glu Ala Thr Glu Asp Leu Ile Leu Lys Val Leu
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Asp Lys Gln Phe His Gly Arg Thr Val Leu Met Ile Ala His His Leu
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Asn Thr Leu Arg Asn Cys His Arg Val Leu Trp Leu Gln Glu Gly Arg
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<213> Anopheles gambiae

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Glu Val Leu Arg Ile Val Thr Ser Arg Tyr Arg Asp Ile Pro Trp Asn
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Trp Phe Asn Ile Thr Lys Met Ile Phe Thr Phe Ala Leu Met Val Met
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Ser Trp Val Asp Leu Gly Val Gly Leu Ala Asn Asp Trp Ile Glu Ser
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Leu Leu Ser Met Leu Pro Ser Leu Pro Phe Gln Ile Met Ala Met Ala
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Leu Tyr Phe Phe Tyr Arg Lys Tyr Gly Ile Arg Ser Thr Gly Thr Met
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Phe Ile Phe Trp Phe Leu Lys Ala Phe Phe Gly Ile Ile Gln Met Arg
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Thr	Glu	Ala	Met	Leu	His	Asp	Val	Arg	Gly	Ser	Gly	Thr	Gly	Asp	Phe	145	150	155	160
Ala	Glu	Phe	Gln	Phe	Val	Ser	Tyr	Thr	Ile	Gln	Tyr	Thr	Phe	Val	Cys	165	170	175	
Cys	Val	Leu	Leu	Leu	Glu	Leu	Phe	Pro	Asp	Lys	Glu	Pro	Arg	Tyr	Ser	180	185	190	
Glu	Trp	Ala	Lys	Leu	Lys	Asn	Pro	Asn	Pro	Glu	Leu	Arg	Ser	Ser	Phe	195	200	205	
Phe	Ser	Arg	Leu	Phe	Tyr	Leu	Tyr	Phe	Asp	Ser	Tyr	Ala	Trp	Arg	Gly	210	215	220	
Phe	Arg	Lys	Pro	Leu	Thr	Asp	Asp	Asp	Met	Tyr	Asp	Leu	Asn	Pro	Glu	225	230	235	240
Asp	Thr	Ser	Arg	Ala	Leu	Val	Pro	Pro	Phe	Asp	Lys	Tyr	Trp	Tyr	Glu	245	250	255	
Ser	Val	Glu	Lys	Gly	Arg	Arg	Lys	Gln	Ile	Ala	Ala	Asp	Lys	Lys	Ala	260	265	270	
Gly	Lys	Thr	Asn	Leu	Val	Tyr	Lys	Pro	Asn	Ala	Ala	Thr	Asn	Gly	Ser	275	280	285	
Val	Leu	Pro	Ala	Met	Val	Lys	Ala	Tyr	Gly	Gly	Pro	Phe	Trp	Phe	Ala	290	295	300	
Gly	Met	Leu	Gln	Phe	Ala	Ile	Ser	Gly	Leu	Gln	Phe	Ala	Ser	Pro	Tyr	305	310	315	320
Leu	Met	Gln	Glu	Ile	Met	Ala	Val	Ile	Ala	Leu	Asp	Gly	Pro	Phe	Trp	325	330	335	
Lys	Gly	Met	Ile	Ile	Thr	Leu	Gly	Leu	Phe	Leu	Thr	Ser	Leu	Leu	Ile	340	345	350	
Ala	Leu	Phe	Asn	Gly	Gln	Tyr	Phe	His	Arg	Thr	Phe	Leu	Val	Gly	Phe	355	360	365	
Arg	Ile	Arg	Thr	Gly	Leu	Ile	Ser	Ala	Ile	Tyr	Arg	Lys	Ala	Leu	Arg	370	375	380	
Ile	Ser	Ser	Phe	Ala	Lys	Lys	Asp	Thr	Thr	Val	Gly	Glu	Ile	Val	Asn	385	390	395	400
Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Phe	Glu	Leu	Thr	Ser	Tyr	Leu	405	410	415	
His	Val	Leu	Trp	Ser	Ala	Pro	Leu	Ile	Ile	Ala	Leu	Cys	Ile	Tyr	Leu	420	425	430	
Leu	Tyr	Glu	Leu	Leu	Gly	Pro	Ala	Val	Phe	Ala	Gly	Leu	Gly	Val	Met	435	440	445	

Val	Ile	Met	Ile	Pro	Ile	Thr	Gly	Phe	Ile	Ala	Thr	Arg	Met	Arg	Asp	450	455	460
Leu	Gln	Val	Glu	Gln	Met	Lys	Ile	Lys	Asp	Glu	Arg	Val	Lys	Lys	Met	465	470	475
Asn	Glu	Ile	Leu	Gly	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	Trp	Glu	485	490	495
Pro	Ser	Phe	Gln	Asp	Thr	Val	Val	Thr	Val	Arg	Asn	Glu	Glu	Leu	Asp	500	505	510
Val	Leu	Lys	Ser	Ala	Ala	Tyr	Tyr	Gly	Ala	Gly	Thr	Tyr	Phe	Val	Trp	515	520	525
Thr	Met	Ala	Pro	Phe	Leu	Val	Thr	Leu	Ala	Ser	Phe	Ala	Val	Tyr	Val	530	535	540
Met	Ile	Asp	Glu	Glu	Asn	Val	Leu	Asp	Pro	Gln	Thr	Ala	Phe	Val	Ala	545	550	555
Leu	Ala	Leu	Phe	Asn	Ile	Leu	Arg	Phe	Pro	Leu	Ala	Met	Phe	Pro	Met	565	570	575
Met	Ile	Thr	Phe	Ala	Met	Gln	Ala	Trp	Val	Ser	Ile	Lys	Arg	Ile	Asp	580	585	590
Lys	Phe	Met	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Asn	Val	Thr	His	Asn	595	600	605
Lys	Ser	Glu	Asn	Ala	Leu	Glu	Val	Lys	Asp	Gly	Thr	Phe	Ser	Trp	Gly	610	615	620
Asp	Asp	Ala	Pro	Thr	Leu	Lys	Asn	Ile	Asn	Leu	Ala	Leu	Arg	Arg	Gly	625	630	635
Lys	Leu	Ser	Ala	Val	Val	Gly	Gly	Val	Gly	Thr	Gly	Lys	Ser	Ser	Leu	645	650	655
Ile	Ser	Ala	Leu	Leu	Gly	Glu	Met	Glu	Lys	Met	Lys	Gly	Ser	Val	Asn	660	665	670
Thr	Asp	Gly	Ser	Ile	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	Gln	Asn	675	680	685
Ala	Thr	Leu	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Arg	Pro	Phe	Asp	Gln	Ala	690	695	700
Lys	Tyr	Asp	Lys	Val	Ile	Glu	Cys	Cys	Ala	Leu	Arg	Pro	Asp	Leu	Glu	705	710	715
Met	Leu	Pro	Gly	Gly	Asp	Thr	Thr	Glu	Ile	Gly	Glu	Lys	Gly	Ile	Asn	725	730	735
Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Val	Ala	Leu	Ala	Arg	Ala	Val	Tyr	740	745	750

Ala	Asp	Ser	Glu	Val	Tyr	Leu	Phe	Asp	Asp	Pro	Leu	Ser	Ala	Val	Asp	755	760	765
Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Lys	Val	Ile	Gly	Pro	Ser	Gly	770	775	780
Met	Leu	Val	Gly	Arg	Ser	Arg	Leu	Leu	Val	Thr	His	Gly	Ile	Ser	Phe	785	790	800
Leu	Pro	Phe	Val	Glu	Glu	Ile	Phe	Val	Met	Lys	Asp	Gly	Glu	Val	Ser	805	810	815
Glu	Ser	Gly	Ser	Tyr	Gln	Glu	Leu	Leu	Asp	Gln	Lys	Gly	Ala	Phe	Ala	820	825	830
Glu	Phe	Leu	Thr	Gln	His	Ile	Gln	Glu	Met	Asp	Asp	Glu	Asp	Glu	Asp	835	840	845
Glu	Leu	Lys	Leu	Ile	Gln	Glu	Ala	Leu	Lys	Asp	Gly	Glu	Ala	Lys	Lys	850	855	860
Ile	Val	Gln	Arg	Ala	Met	Ser	Thr	Arg	Ser	Gln	Arg	Ser	Gly	Ser	Ser	865	870	875
Asn	Gly	Ser	Val	Arg	Lys	Lys	Arg	Val	Ser	Arg	Ala	Glu	Ser	Arg	Asn	885	890	895
Ser	Asn	Lys	Pro	Arg	Ala	Val	Glu	Gln	Thr	Val	Ala	Gln	Gln	Ser	Ser	900	905	910
Ala	Thr	Leu	Ile	Glu	Lys	Glu	Glu	Ser	Ala	Thr	Gly	Ala	Val	Gly	Tyr	915	920	925
Val	Val	Tyr	Ile	Lys	Tyr	Phe	Lys	Gly	Ile	Gly	Leu	Trp	Leu	Gly	Phe	930	935	940
Trp	Ser	Ile	Phe	Phe	Ser	Val	Ile	Asn	Gln	Gly	Ala	Ser	Ile	Tyr	Ala	945	950	955
Asn	Ile	Trp	Leu	Thr	Asp	Trp	Ser	Glu	Asp	Pro	Glu	Ala	Ala	Thr	Asp	965	970	975
Pro	Ser	Val	Arg	Asp	Met	Tyr	Leu	Gly	Val	Tyr	Gly	Gly	Leu	Gly	Gly	980	985	990
Ala	Gln	Ser	Ile	Ala	Leu	Leu	Ile	Ala	Ser	Val	Thr	Leu	Ala	Leu	Gly	995	1000	1005
Cys	Ile	Lys	Ala	Ala	Arg	Glu	Leu	His	Asn	Asn	Leu	Leu	Glu	Ser	Ser	1010	1015	1020
Met	Arg	Met	Pro	Met	Ser	Phe	Phe	Asp	Thr	Thr	Pro	Leu	Gly	Arg	Ile	1025	1030	1035
Met	Asn	Arg	Phe	Ser	Lys	Asp	Val	Asp	Val	Val	Asp	Asn	Ile	Leu	Pro	1045	1050	1055

Gln Ser Ile Arg Ala Trp Leu Leu Met Phe Phe Asn Val Ile Gly Val
 1060 1065 1070

Phe Val Val Ile Gly Ile Ser Thr Pro Ile Phe Leu Ala Val Val Pro
 1075 1080 1085

Ala Phe Leu Val Ile Tyr Tyr Leu Ile Gln Lys Phe Tyr Ile Ala Thr
 1090 1095 1100

Ser Arg Gln Leu Lys Arg Leu Glu Ser Val Thr Arg Ser Pro Ile Tyr
 1105 1110 1115 1120

Ser His Phe Gly Glu Ser Ile Thr Gly Gln Ser Thr Ile Arg Ala Tyr
 1125 1130 1135

Gly Gln Gln Asp Arg Phe Met Asn Glu Ser Glu Gln Arg Val Asp Tyr
 1140 1145 1150

Asn Gln Leu Thr Ser Tyr Pro Ser Ile Ile Ala Asn Arg Trp Leu Ala
 1155 1160 1165

Val Arg Leu Glu Leu Val Gly Ala Leu Val Val Phe Phe Ala Ala Leu
 1170 1175 1180

Phe Ala Met Val Ala Arg Asp Thr Ile Gly Gln Ala Thr Val Gly Leu
 1185 1190 1195 1200

Ser Ile Ser Tyr Ala Leu Gln Ile Ser Ala Thr Leu Ser Phe Leu Val
 1205 1210 1215

Arg Met Thr Ala Glu Val Glu Thr Asn Ile Val Ala Ile Glu Arg Leu
 1220 1225 1230

Glu Glu Tyr Thr Val Leu Pro Arg Glu Ala Glu Trp Gln Leu Gly His
 1235 1240 1245

Val Asp Lys Ala Trp Pro Val Glu Gly Lys Val Glu Phe Lys Asp Tyr
 1250 1255 1260

Gln Ile Arg Tyr Arg Glu Gly Leu Asp Leu Val Ile Arg Gly Ile Ser
 1265 1270 1275 1280

Leu Asn Val Arg Gly Gly Glu Lys Ile Gly Ile Val Gly Arg Thr Gly
 1285 1290 1295

Ala Gly Lys Ser Ser Leu Thr Leu Gly Leu Phe Arg Ile Val Glu Ala
 1300 1305 1310

Ala Gly Gly Gln Ile Ile Ile Asp Gly Leu Asp Ile Ser Lys Met Gly
 1315 1320 1325

Leu His Gln Leu Arg Gly Arg Leu Thr Ile Ile Pro Gln Asp Pro Val
 1330 1335 1340

Leu Phe Ser Gly Thr Leu Arg Ala Asn Val Asp Pro Phe Lys Ser Tyr
 1345 1350 1355 1360

Ser Asp Asp Leu Val Trp Lys Ala Leu Glu Leu Ser His Leu Lys Thr
 1365 1370 1375

Phe Val Lys Gly Leu Ala Ala Gly Leu Asp His Glu Ile Ala Glu Asn
 1380 1385 1390

Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Ile Cys Leu Ala Arg
 1395 1400 1405

Ala Val Leu Arg Lys Thr Lys Val Leu Ile Leu Asp Glu Ala Thr Ala
 1410 1415 1420

Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr Ile Arg Thr
 1425 1430 1435 1440

Glu Phe Ala Asp Cys Thr Ile Leu Thr Ile Ala His Arg Leu Asn Thr
 1445 1450 1455

Ile Leu Asp Ser Asp Arg Val Leu Val Leu Asp Lys Gly Leu Val Ala
 1460 1465 1470

Glu Cys Asp Ser Pro Gln Asn Leu Leu Ala Asn Arg Glu Ser Ile Phe
 1475 1480 1485

Phe Gly Met Ala Lys Asn Ala Gly Ile Val Ser
 1490 1495

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<211> 1505

<212> PRT

<213> Anopheles gambiae

<400> 4

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 20 25 30

Ile Leu Gln Trp Val Pro Cys Leu Phe Leu Phe Val Phe Ser Ile Tyr
 35 40 45

Asp Ile Phe Lys Ile Thr Glu Ser Lys Tyr Arg Asp Ile Pro Trp Asn
 50 55 60

Trp Tyr Asn Leu Ser Lys Met Leu Val Ile Phe Leu Leu Met Cys Met
 65 70 75 80

Cys Trp Ile Asp Leu Gly Met Val Val Gly Tyr Gln Asp Glu Gln Gly
 85 90 95

Leu Tyr Asp Val Gln Ile Leu Thr Ala Val Phe Asn Ala Leu Ala Tyr
 100 105 110

Ile Asp Leu Leu Val Leu Leu Phe Phe Met Arg Lys Tyr Gly Val Arg
 115 120 125

Thr	Ser	Gly	Thr	Met	Phe	Met	Phe	Trp	Phe	Leu	Arg	Met	Phe	Phe	Gly
130						135					140				
Ile	Ile	Gln	Leu	Arg	Thr	Glu	Val	Met	Glu	Asn	Asp	Lys	Arg	Pro	Asn
145					150					155					160
Ala	Ile	Gly	Ser	Gly	Asp	Thr	Val	Asp	Phe	Trp	Glu	Tyr	Gln	Tyr	Val
				165					170					175	
Ser	Tyr	Ile	Leu	Gln	Tyr	Ser	Leu	Ile	Cys	Leu	Met	Leu	Val	Leu	Glu
			180					185					190		
Leu	Phe	Pro	Asp	Lys	Glu	Pro	Ser	Phe	Ser	Tyr	Tyr	Pro	Lys	Ala	Ala
		195					200					205			
Lys	Pro	Asn	Pro	Glu	Leu	Arg	Ser	Ser	Phe	Phe	Ser	Lys	Leu	Leu	Phe
	210					215					220				
Leu	His	Phe	Asp	Ala	Phe	Ala	Trp	Lys	Gly	Phe	Arg	Asn	Pro	Leu	Thr
225					230					235					240
Met	Asn	Asp	Met	Tyr	Asp	Ile	Asn	Pro	Gln	Asp	Ser	Ala	Arg	Glu	Leu
				245					250					255	
Val	Pro	Pro	Phe	Asp	Lys	Tyr	Trp	Lys	Ile	Ser	Val	Glu	Lys	Gly	Arg
			260					265					270		
Lys	Gln	Gln	Met	Ala	Ser	Asp	Arg	Lys	Ala	Gly	Lys	Pro	Asp	Ile	Asp
		275					280					285			
Tyr	Lys	Pro	His	Ser	Pro	Ser	Asn	Gly	Ser	Val	Leu	Tyr	Thr	Met	Ile
	290					295					300				
Arg	Ala	Tyr	Gly	Gly	Pro	Phe	Trp	Phe	Ala	Gly	Met	Leu	Gln	Leu	Ala
305					310					315					320
Ile	Ser	Gly	Leu	Gln	Phe	Ala	Ser	Pro	Tyr	Leu	Met	Gln	Glu	Leu	Met
				325					330					335	
Ala	Val	Ile	Ala	Phe	Asp	Gly	Pro	Leu	Trp	Lys	Gly	Phe	Leu	Leu	Thr
			340					345					350		
Phe	Gly	Leu	Phe	Gly	Ala	Ser	Leu	Leu	Gly	Leu	Phe	Asn	Gly	Gln	
		355					360				365				
Tyr	Leu	Phe	Tyr	Thr	Phe	Leu	Ser	Gly	Phe	Arg	Ile	Arg	Thr	Gly	Leu
	370					375					380				
Ile	Ser	Ala	Ile	Tyr	Arg	Lys	Ala	Leu	Arg	Ile	Ser	Ser	Ala	Ala	Lys
385					390					395					400
Lys	Asp	Thr	Thr	Val	Gly	Glu	Ile	Val	Asn	Leu	Met	Ala	Val	Asp	Ala
				405					410					415	
Gln	Lys	Phe	Phe	Glu	Leu	Thr	Ser	Tyr	Leu	His	Ile	Leu	Trp	Ser	Ala
			420					425				430			

Leu Leu Ile Ile Gly Leu Cys Val Phe Leu Leu Tyr Asp Ile Leu Gly
 435 440 445
 Pro Ala Val Phe Ala Gly Leu Gly Val Met Ile Leu Met Thr Pro Val
 450 455 460
 Ser Gly Val Val Ala Ala Lys Leu Lys Thr His Gln Val Ala Gln Met
 465 470 475 480
 Lys Leu Lys Asp Glu Arg Val Lys Lys Met Asn Glu Ile Leu Gly Gly
 485 490 495
 Ile Lys Val Leu Lys Leu Tyr Ala Trp Glu Pro Ser Phe Gln Asp Ser
 500 505 510
 Ile Leu Asn Val Arg Asp Glu Glu Val Gly Ile Leu Lys Lys Met Ala
 515 520 525
 Tyr Tyr Gly Ala Gly Ile Phe Phe Thr Phe Thr Ile Ala Pro Phe Leu
 530 535 540
 Val Thr Leu Val Ser Phe Ala Val Tyr Val Leu Ile Asp Glu Asn Asn
 545 550 555 560
 Val Leu Asp Pro Gln Thr Ala Phe Val Ser Leu Ala Leu Phe Asn Ile
 565 570 575
 Met Arg Phe Pro Leu Gly Met Phe Pro Met Val Val Thr Phe Ser Met
 580 585 590
 Gln Ala Trp Val Ser Ile Lys Arg Ile Asp Lys Phe Leu Asn Ser Ala
 595 600 605
 Glu Leu Asp Pro Asn Asn Val Thr His Asn Lys Ser Asp Glu Ala Leu
 610 615 620
 Thr Ile Lys Asp Gly Thr Phe Ser Trp Gly Asp Glu Thr Pro Thr Leu
 625 630 635 640
 Lys Asn Ile Asn Leu Ser Leu Arg Lys Gly Gln Leu Ser Ala Ile Val
 645 650 655
 Gly Thr Val Gly Thr Gly Lys Ser Ser Leu Ile Ser Ala Leu Leu Gly
 660 665 670
 Glu Met Glu Lys Ile Ser Gly His Val Asn Thr Asp Gly Ser Ile Ala
 675 680 685
 Tyr Val Pro Gln Gln Ala Trp Ile Gln Asn Ala Thr Leu Arg Asp Asn
 690 695 700
 Ile Leu Phe Gly Lys Ala Phe Asp Gln Arg Lys Tyr Asp Asn Val Ile
 705 710 715 720
 Glu Cys Cys Ala Leu Arg Pro Asp Leu Glu Met Leu Pro Gly Gly Asp
 725 730 735

Ser	Thr	Glu	Ile	Gly	Glu	Lys	Gly	Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	740	745	750
Gln	Arg	Val	Ala	Leu	Ala	Arg	Ala	Val	Tyr	Ala	Asp	Ala	Glu	Val	Tyr	755	760	765
Leu	Phe	Asp	Asp	Pro	Leu	Ser	Ala	Val	Asp	Ala	His	Val	Gly	Lys	His	770	775	780
Ile	Phe	Glu	Lys	Val	Ile	Gly	Pro	Ser	Gly	Met	Leu	Val	Gly	Lys	Ser	785	790	795
Arg	Leu	Leu	Val	Thr	His	Gly	Ile	Ser	Phe	Leu	Pro	Phe	Val	Glu	Asn	805	810	815
Ile	Leu	Val	Leu	Lys	Asp	Gly	Glu	Ile	Ser	Glu	Ser	Gly	Thr	Tyr	Gln	820	825	830
Glu	Leu	Ile	Asp	Gln	Lys	Gly	Ala	Phe	Ala	Glu	Phe	Leu	Ser	Gln	His	835	840	845
Ile	Gln	Glu	Leu	Asp	Asp	Glu	Asp	Glu	Glu	Ile	Ser	Leu	Ile	Gln	Glu	850	855	860
Thr	Leu	Asn	Asp	Gly	Val	Val	Asn	Asn	Val	Ile	Gln	Arg	Ala	Leu	Ser	865	870	875
Val	Arg	Ser	Asn	Arg	Ser	Asn	Gly	Ser	Asp	Gly	Ser	Thr	Arg	Lys	Lys	885	890	895
Pro	Ile	Ser	Arg	Gln	Val	Ser	Lys	Gln	Ser	Val	His	Ser	Lys	Thr	Val	900	905	910
Thr	Thr	Val	Pro	Gly	Arg	Ala	Asn	Leu	Ile	Gly	Val	Glu	Glu	Ser	Ala	915	920	925
Thr	Gly	Ala	Val	Thr	Trp	Leu	Val	Tyr	Lys	Lys	Tyr	Ile	Gln	Ser	Ile	930	935	940
Gly	Phe	Lys	Phe	Gly	Phe	Gly	Ser	Val	Leu	Phe	Thr	Ala	Ile	Asn	Gln	945	950	955
Gly	Ser	Gly	Ile	Phe	Ser	Asn	Leu	Trp	Leu	Thr	Asp	Trp	Ser	Glu	Asp	965	970	975
Pro	Asp	Ala	Ala	Thr	Asp	Pro	Ser	Val	Arg	Asp	Lys	Tyr	Leu	Gly	Val	980	985	990
Tyr	Gly	Ala	Leu	Gly	Gly	Ala	Gln	Ser	Ile	Ala	Leu	Phe	Val	Ala	Ala	995	1000	1005
Leu	Leu	Ile	Ser	Leu	Gly	Cys	Leu	Lys	Ala	Ala	Lys	Glu	Ser	His	Asn	1010	1015	1020
Lys	Leu	Leu	Glu	Ser	Cys	Leu	Arg	Met	Pro	Met	Ser	Phe	Phe	Asp	Thr	1025	1030	1035
																		1040

Thr Pro Leu Gly Arg Ile Ile Asn Arg Phe Ser Lys Asp Val Asp Val
 1045 1050 1055
 Val Asp Asn Val Leu Pro Val Thr Ile Arg Ala Trp Leu Leu Phe Leu
 1060 1065 1070
 Phe Asn Val Phe Gly Val Phe Ile Val Ile Gly Thr Ser Thr Pro Ile
 1075 1080 1085
 Phe Leu Ala Val Val Pro Pro Leu Met Val Ile Tyr Tyr Phe Val Gln
 1090 1095 1100
 Arg Phe Tyr Ile Asp Thr Ser Arg Gln Leu Lys Arg Leu Glu Ser Val
 1105 1110 1115 1120
 Thr Arg Ser Pro Ile Tyr Ser His Phe Gly Glu Ser Ile Gly Gly Gln
 1125 1130 1135
 Ser Thr Ile Arg Ala Tyr Gly Gln Gln Asp Arg Phe Thr Gln Glu Ser
 1140 1145 1150
 Glu Arg Arg Val Asp Tyr Asn Gln Leu Val Ser Tyr Pro Thr Ile Val
 1155 1160 1165
 Ala Asn Arg Trp Leu Ala Val Arg Leu Glu Leu Ile Gly Ser Cys Val
 1170 1175 1180
 Ile Leu Phe Ala Ala Leu Phe Ala Ile Leu Ala Arg Asp Thr Ile Gly
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 Gln Ala Thr Val Gly Val Ser Ile Ser Tyr Ala Leu Gln Ile Ser His
 1205 1210 1215
 Tyr Leu Ser Phe Leu Val Arg Met Thr Ser Glu Val Glu Thr Asn Ile
 1220 1225 1230
 Val Ala Val Glu Arg Leu Glu Glu Tyr Thr Val Leu Pro Arg Glu Ala
 1235 1240 1245
 Glu Trp Gln Lys Gly Thr Val Asp Lys Ala Trp Pro Val Glu Gly Lys
 1250 1255 1260
 Val Glu Phe Lys Asp Tyr Gln Ile Arg Tyr Arg Glu Gly Leu Asp Leu
 1265 1270 1275 1280
 Val Ile Arg Gly Ile Ser Leu Asn Val Arg Gly Gly Glu Lys Ile Gly
 1285 1290 1295
 Ile Val Gly Arg Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Gly Leu
 1300 1305 1310
 Phe Arg Ile Val Glu Ala Ala Gly Gly Gln Ile Ile Ile Asp Gly Leu
 1315 1320 1325
 Asp Ile Ser Lys Met Gly Leu His Gln Leu Arg Gly Arg Leu Thr Ile
 1330 1335 1340

Ile Pro Gln Asp Pro Val Leu Phe Ser Gly Thr Leu Arg Ala Asn Val
 1345 1350 1355 1360
 Asp Pro Phe Lys Ser Tyr Ser Asp Asp Gln Val Trp Lys Ala Leu Glu
 1365 1370 1375
 Leu Ser His Leu Lys Thr Phe Val Lys Gly Leu Ser Ala Gly Leu Asp
 1380 1385 1390
 His Glu Ile Ala Glu Asn Gly Glu Asn Leu Ser Val Gly Gln Arg Gln
 1395 1400 1405
 Leu Ile Cys Leu Ala Arg Ala Val Leu Arg Lys Thr Lys Val Leu Ile
 1410 1415 1420
 Leu Asp Glu Ala Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile
 1425 1430 1435 1440
 Gln Lys Thr Ile Arg Thr Glu Phe Ala Asp Cys Thr Ile Leu Thr Ile
 1445 1450 1455
 Ala His Arg Leu Asn Thr Ile Leu Asp Ser Asp Arg Val Leu Val Leu
 1460 1465 1470
 Asp Lys Gly Leu Val Ala Glu Cys Asp Ser Pro Gln Asn Leu Leu Ala
 1475 1480 1485
 Asn Arg Glu Ser Ile Phe Tyr Gly Met Ala Lys Asn Ala Gly Ile Val
 1490 1495 1500

Ser
 1505

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 <212> PRT
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 Met Thr Phe Glu Asp Phe Cys Gly Gly Pro Phe Trp Asp Asp Glu Phe
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 Val Trp Asp Val Asp Asn Pro Asn Leu Thr Phe Cys Phe Gln Arg Val
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 Ile Leu Gln Trp Val Pro Cys Leu Phe Leu Phe Val Phe Ser Ile Tyr
 35 40 45
 Asp Ile Phe Lys Ile Thr Glu Ser Lys Tyr Arg Asp Ile Pro Trp Asn
 50 55 60
 Trp Tyr Asn Leu Ser Lys Met Leu Val Ile Phe Leu Leu Met Cys Met
 65 70 75 80
 Cys Trp Ile Asp Leu Gly Met Val Val Gly Tyr Gln Asp Glu Gln Gly
 85 90 95

Leu	Tyr	Asp	Val	Gln	Ile	Leu	Thr	Ala	Val	Phe	Asn	Ala	Leu	Ala	Tyr
			100					105					110		
Ile	Asp	Leu	Leu	Val	Leu	Leu	Phe	Phe	Met	Arg	Lys	Tyr	Gly	Val	Arg
		115					120					125			
Thr	Ser	Gly	Thr	Met	Phe	Met	Phe	Trp	Phe	Leu	Arg	Met	Phe	Phe	Gly
		130				135					140				
Ile	Ile	Gln	Leu	Arg	Thr	Glu	Val	Met	Glu	Asn	Asp	Lys	Arg	Pro	Asn
145					150					155					160
Ala	Ile	Gly	Ser	Gly	Asp	Thr	Val	Asp	Phe	Trp	Glu	Tyr	Gln	Tyr	Val
			165						170					175	
Ser	Tyr	Ile	Leu	Gln	Tyr	Ser	Leu	Ile	Cys	Leu	Met	Leu	Val	Leu	Glu
		180					185						190		
Leu	Phe	Pro	Asp	Lys	Glu	Pro	Thr	Phe	Ser	Tyr	Tyr	Pro	Lys	Ser	Lys
		195					200					205			
Asn	Pro	Asn	Pro	Glu	Leu	Lys	Ser	Ser	Phe	Phe	Ala	Lys	Leu	Leu	Phe
		210				215					220				
Leu	Tyr	Phe	Asp	Thr	Phe	Ala	Trp	Lys	Gly	Phe	Arg	Lys	Pro	Leu	Thr
225					230					235					240
Met	Glu	Glu	Met	Tyr	Asp	Ile	Asn	Pro	Gln	Asp	Thr	Ser	Arg	Glu	Leu
		245							250					255	
Val	Pro	Pro	Phe	Asp	Lys	Tyr	Trp	Asp	Met	Ser	Val	Ala	Asn	Gly	Arg
			260					265					270		
Lys	Lys	Gln	Ile	Ala	Ala	Asp	Lys	Lys	Ala	Gly	Lys	Thr	Asn	Ile	Glu
		275					280					285			
Tyr	Lys	Pro	His	Ser	Glu	Thr	Asn	Gly	Ser	Ser	Leu	Tyr	Ala	Met	Val
		290				295					300				
Arg	Ala	Tyr	Gly	Ala	Pro	Phe	Trp	Phe	Ala	Gly	Met	Leu	Gln	Leu	Ala
305					310					315					320
Ile	Ser	Gly	Leu	Gln	Phe	Ala	Ser	Pro	Tyr	Leu	Met	Gln	Glu	Met	Met
			325						330					335	
Ala	Val	Ile	Ala	Leu	Asp	Gly	Pro	Val	Trp	Lys	Gly	Leu	Leu	Leu	Thr
			340					345					350		
Phe	Ala	Leu	Phe	Ala	Ala	Ser	Leu	Leu	Leu	Ala	Leu	Leu	Asn	Gly	Gln
		355					360					365			
Tyr	Tyr	Tyr	Asn	Thr	Phe	Leu	Ser	Gly	Phe	Arg	Ile	Arg	Thr	Gly	Leu
		370				375					380				
Val	Ser	Ala	Ile	Tyr	Arg	Lys	Ala	Leu	Arg	Ile	Ser	Ser	Ala	Ala	Lys
385					390					395					400

Lys	Asp	Thr	Thr	Val	Gly	Glu	Ile	Val	Asn	Leu	Met	Ala	Val	Asp	Ala	
				405					410					415		
Gln	Arg	Phe	Phe	Glu	Leu	Thr	Ser	Tyr	Met	His	Ile	Leu	Trp	Ser	Gly	
			420					425					430			
Val	Leu	Ile	Ile	Ala	Leu	Cys	Val	Tyr	Leu	Leu	Tyr	Asp	Ile	Leu	Gly	
		435					440					445				
Ala	Ala	Val	Phe	Ala	Gly	Leu	Gly	Val	Met	Ile	Leu	Ile	Thr	Pro	Val	
	450					455					460					
Ser	Gly	Val	Ile	Ala	Thr	Lys	Met	Arg	Asp	Ala	Gln	Val	Ala	Gln	Met	
465					470				475					480		
Lys	Ile	Lys	Asp	Asp	Arg	Val	Lys	Lys	Met	Asn	Glu	Ile	Leu	Gly	Gly	
			485						490					495		
Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	Trp	Glu	Pro	Ser	Phe	Gln	Asp	Asn	
		500						505					510			
Ile	Leu	Thr	Val	Arg	Lys	Glu	Glu	Ile	Gly	Ile	Leu	Lys	Arg	Met	Ala	
	515						520					525				
Tyr	Tyr	Gly	Ala	Gly	Ile	Tyr	Phe	Thr	Phe	Thr	Ile	Ala	Pro	Phe	Leu	
	530					535					540					
Val	Thr	Leu	Val	Ser	Phe	Ala	Val	Tyr	Val	Leu	Met	Asp	Glu	Glu	Asn	
545					550					555					560	
Ile	Leu	Asp	Pro	Gln	Thr	Ala	Phe	Val	Ser	Leu	Ala	Leu	Phe	Asn	Ile	
			565						570					575		
Leu	Arg	Phe	Pro	Leu	Gly	Met	Leu	Pro	Met	Met	Val	Thr	Phe	Ser	Met	
		580						585					590			
Gln	Ala	Trp	Val	Ser	Val	Lys	Arg	Ile	Asp	Lys	Phe	Leu	Asn	Ser	Ala	
		595					600					605				
Glu	Leu	Asp	Pro	Ser	Asn	Val	Ser	Asn	Asn	Lys	Ser	Asp	Glu	Ala	Leu	
	610					615					620					
Thr	Ile	Lys	Asp	Gly	Thr	Phe	Ser	Trp	Gly	Asp	Glu	Thr	Pro	Thr	Leu	
625					630					635					640	
Lys	Asn	Ile	Asn	Leu	Ser	Leu	Arg	Lys	Gly	Gln	Leu	Ser	Ala	Ile	Val	
			645						650					655		
Gly	Thr	Val	Gly	Thr	Gly	Lys	Ser	Ser	Leu	Ile	Ser	Ala	Leu	Leu	Gly	
		660						665					670			
Glu	Met	Glu	Lys	Ile	Ser	Gly	His	Val	Asn	Thr	Asp	Gly	Ser	Ile	Ala	
	675						680					685				
Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	Gln	Asn	Ala	Thr	Leu	Arg	Asp	Asn	
690						695					700					

Ile	Leu	Phe	Gly	Lys	Ala	Phe	Asp	Gln	Arg	Lys	Tyr	Asp	Asn	Val	Ile	705	710	715	720
Glu	Cys	Cys	Ala	Leu	Arg	Pro	Asp	Leu	Glu	Met	Leu	Pro	Gly	Gly	Asp	725	730	735	
Ser	Thr	Glu	Ile	Gly	Glu	Lys	Gly	Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	740	745	750	
Gln	Arg	Val	Ala	Leu	Ala	Arg	Ala	Val	Tyr	Ala	Asp	Ala	Glu	Val	Tyr	755	760	765	
Leu	Phe	Asp	Asp	Pro	Leu	Ser	Ala	Val	Asp	Ala	His	Val	Gly	Lys	His	770	775	780	
Ile	Phe	Glu	Lys	Val	Ile	Gly	Pro	Ser	Gly	Met	Leu	Val	Gly	Lys	Ser	785	790	795	800
Arg	Leu	Leu	Val	Thr	His	Gly	Ile	Ser	Tyr	Leu	Pro	Phe	Val	Glu	Asn	805	810	815	
Ile	Phe	Val	Val	Lys	Asp	Gly	Glu	Ile	Ser	Glu	Ser	Gly	Ser	Tyr	Gln	820	825	830	
Gln	Leu	Leu	Asp	Gln	Lys	Gly	Ala	Phe	Ala	Glu	Phe	Leu	Thr	Gln	His	835	840	845	
Ile	Gln	Glu	Leu	Asp	Glu	Ala	Asp	Glu	Asp	Glu	Ile	Lys	Leu	Ile	Gln	850	855	860	
Glu	Thr	Leu	Lys	Asp	Glu	Thr	Ala	Gln	Arg	Ile	Val	Glu	Arg	Ser	Leu	865	870	875	880
Ser	Val	Arg	Ser	Gly	Arg	Ser	Gly	Gly	Ser	Asn	Ser	Ser	Ile	Arg	Lys	885	890	895	
Lys	Arg	Ile	Ser	Arg	Gln	Glu	Ser	Lys	Ala	Ser	Ala	Lys	Lys	Glu	Asp	900	905	910	
Pro	Ile	Ile	Gln	Asn	Leu	Asp	Lys	Ala	Thr	Leu	Ile	Glu	Lys	Glu	Glu	915	920	925	
Ser	Ala	Thr	Gly	Ala	Val	Thr	Trp	Ala	Val	Tyr	Lys	Lys	Tyr	Val	Thr	930	935	940	
Ala	Ile	Gly	Phe	Gln	Phe	Gly	Phe	Trp	Ser	Val	Val	Phe	Ser	Ala	Ile	945	950	955	960
Asn	Gln	Gly	Ser	Gly	Ile	Tyr	Ser	Ser	Met	Trp	Leu	Thr	Asp	Trp	Ser	965	970	975	
Glu	Asp	Pro	Glu	Ala	Ile	Thr	Asp	Thr	Ser	Val	Arg	Asp	Met	Tyr	Leu	980	985	990	
Gly	Val	Tyr	Gly	Ala	Leu	Gly	Gly	Val	Gln	Ser	Ile	Ala	Leu	Phe	Ile	995	1000	1005	

Gly Ser Val Leu Leu Ala Leu Gly Cys Leu Lys Ala Ala Glu Glu Ser
 1010 1015 1020
 His Asn Lys Leu Leu Glu Ser Ser Met His Met Pro Met Ser Phe Phe
 1025 1030 1035 1040
 Asp Thr Thr Pro Leu Gly Arg Ile Ile Asn Arg Phe Ser Lys Asp Val
 1045 1050 1055
 Asp Val Val Asp Asn Ile Leu Pro Ala Thr Ile Arg Ala Trp Leu Leu
 1060 1065 1070
 Met Leu Phe Ser Val Ile Gly Val Phe Val Val Ile Gly Ile Ser Thr
 1075 1080 1085
 Pro Ile Phe Leu Ala Ile Val Pro Pro Leu Met Ile Ile Tyr Tyr Phe
 1090 1095 1100
 Val Gln Arg Phe Tyr Ile Glu Thr Ser Arg Gln Leu Lys Arg Leu Glu
 1105 1110 1115 1120
 Ser Val Thr Arg Ser Pro Ile Tyr Ser His Phe Gly Glu Ser Ile Gly
 1125 1130 1135
 Gly Gln Ser Thr Ile Arg Ala Tyr Ala Gln Gln Glu Arg Phe Ile Arg
 1140 1145 1150
 Glu Ser Glu His Arg Val Asp Tyr Asn Gln Leu Val Thr Tyr Pro Thr
 1155 1160 1165
 Ile Leu Ala Asn Arg Trp Leu Gly Val Arg Leu Glu Ile Ile Gly Ser
 1170 1175 1180
 Leu Val Ile Leu Phe Ala Ala Leu Phe Ala Ile Leu Ala Arg Asp Thr
 1185 1190 1195 1200
 Ile Gly Gln Ala Thr Val Gly Leu Ser Ile Ser Tyr Ala Leu Gln Ile
 1205 1210 1215
 Ser Asn Val Leu Ser Phe Leu Val Arg Met Thr Ala Glu Val Glu Thr
 1220 1225 1230
 Asn Ile Val Ala Ile Glu Arg Leu Glu Glu Tyr Thr Val Leu Pro Arg
 1235 1240 1245
 Glu Ala Glu Trp Gln Lys Gly Thr Val Asp Lys Ala Trp Pro Val Glu
 1250 1255 1260
 Gly Lys Val Glu Phe Lys Asp Tyr Gln Ile Arg Tyr Arg Glu Gly Leu
 1265 1270 1275 1280
 Asp Leu Val Ile Arg Gly Ile Ser Leu Asn Val Arg Gly Gly Glu Lys
 1285 1290 1295
 Ile Gly Ile Val Gly Arg Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu
 1300 1305 1310

Gly Leu Phe Arg Ile Val Glu Ala Ala Gly Gly Gln Ile Ile Ile Asp
 1315 1320 1325

Gly Leu Asp Ile Ser Lys Met Gly Leu His Gln Leu Arg Ser Arg Leu
 1330 1335 1340

Thr Ile Ile Pro Gln Asp Pro Val Leu Phe Ser Gly Thr Leu Arg Ala
 1345 1350 1355 1360

Asn Val Asp Pro Phe Lys Ser Tyr Ser Asp Asp Gln Val Trp Lys Ala
 1365 1370 1375

Leu Glu Leu Ser His Leu Lys Thr Phe Val Lys Gly Leu Thr Ala Gly
 1380 1385 1390

Leu Asp His Glu Ile Ala Glu Asn Gly Glu Asn Leu Ser Val Gly Gln
 1395 1400 1405

Arg Gln Leu Val Cys Leu Ala Arg Ala Ile Leu Arg Lys Thr Lys Val
 1410 1415 1420

Leu Ile Leu Asp Glu Ala Thr Ala Ala Val Asp Leu Glu Thr Asp Asp
 1425 1430 1435 1440

Leu Ile Gln Lys Thr Ile Arg Thr Glu Phe Ala Asp Cys Thr Ile Leu
 1445 1450 1455

Thr Ile Ala His Arg Leu Asn Thr Ile Leu Asp Ser Asp Arg Val Leu
 1460 1465 1470

Val Leu Asp Lys Gly Leu Val Ala Glu Cys Asp Ser Pro Gln Asn Leu
 1475 1480 1485

Leu Ala Asn Arg Asp Ser Ile Phe His Ser Met Ala Lys Asn Ala Gly
 1490 1495 1500

Ile Val Ser
 1505

<210> 6

<211> 1531

<212> PRT

<213> Homo sapiens

<400> 6

Met Ala Leu Arg Gly Phe Cys Ser Ala Asp Gly Ser Asp Pro Leu Trp
 1 5 10 15

Asp Trp Asn Val Thr Trp Asn Thr Ser Asn Pro Asp Phe Thr Lys Cys
 20 25 30

Phe Gln Asn Thr Val Leu Val Trp Val Pro Cys Phe Tyr Leu Trp Ala
 35 40 45

Cys Phe Pro Phe Tyr Phe Leu Tyr Leu Ser Arg His Asp Arg Gly Tyr
 50 55 60

Ile	Gln	Met	Thr	Pro	Leu	Asn	Lys	Thr	Lys	Thr	Ala	Leu	Gly	Phe	Leu	65	70	75	80
Leu	Trp	Ile	Val	Cys	Trp	Ala	Asp	Leu	Phe	Tyr	Ser	Phe	Trp	Glu	Arg	85	90	95	
Ser	Arg	Gly	Ile	Phe	Leu	Ala	Pro	Val	Phe	Leu	Val	Ser	Pro	Thr	Leu	100	105	110	
Leu	Gly	Ile	Thr	Thr	Leu	Leu	Ala	Thr	Phe	Leu	Ile	Gln	Leu	Glu	Arg	115	120	125	
Arg	Lys	Gly	Val	Gln	Ser	Ser	Gly	Ile	Met	Leu	Thr	Phe	Trp	Leu	Val	130	135	140	
Ala	Leu	Val	Cys	Ala	Leu	Ala	Ile	Leu	Arg	Ser	Lys	Ile	Met	Thr	Ala	145	150	155	160
Leu	Lys	Glu	Asp	Ala	Gln	Val	Asp	Leu	Phe	Arg	Asp	Ile	Thr	Phe	Tyr	165	170	175	
Val	Tyr	Phe	Ser	Leu	Leu	Leu	Ile	Gln	Leu	Val	Leu	Ser	Cys	Phe	Ser	180	185	190	
Asp	Arg	Ser	Pro	Leu	Phe	Ser	Glu	Thr	Ile	His	Asp	Pro	Asn	Pro	Cys	195	200	205	
Pro	Glu	Ser	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Phe	Trp	Trp	Ile	210	215	220	
Thr	Gly	Leu	Ile	Val	Arg	Gly	Tyr	Arg	Gln	Pro	Leu	Glu	Gly	Ser	Asp	225	230	235	240
Leu	Trp	Ser	Leu	Asn	Lys	Glu	Asp	Thr	Ser	Glu	Gln	Val	Val	Pro	Val	245	250	255	
Leu	Val	Lys	Asn	Trp	Lys	Lys	Glu	Cys	Ala	Lys	Thr	Arg	Lys	Gln	Pro	260	265	270	
Val	Lys	Val	Val	Tyr	Ser	Ser	Lys	Asp	Pro	Ala	Gln	Pro	Lys	Glu	Ser	275	280	285	
Ser	Lys	Val	Asp	Ala	Asn	Glu	Glu	Val	Glu	Ala	Leu	Ile	Val	Lys	Ser	290	295	300	
Pro	Gln	Lys	Glu	Trp	Asn	Pro	Ser	Leu	Phe	Lys	Val	Leu	Tyr	Lys	Thr	305	310	315	320
Phe	Gly	Pro	Tyr	Phe	Leu	Met	Ser	Phe	Phe	Phe	Lys	Ala	Ile	His	Asp	325	330	335	
Leu	Met	Met	Phe	Ser	Gly	Pro	Gln	Ile	Leu	Lys	Leu	Leu	Ile	Lys	Phe	340	345	350	
Val	Asn	Asp	Thr	Lys	Ala	Pro	Asp	Trp	Gln	Gly	Tyr	Phe	Tyr	Thr	Val	355	360	365	

Leu	Leu	Phe	Val	Thr	Ala	Cys	Leu	Gln	Thr	Leu	Val	Leu	His	Gln	Tyr
370						375				380					
Phe	His	Ile	Cys	Phe	Val	Ser	Gly	Met	Arg	Ile	Lys	Thr	Ala	Val	Ile
385					390					395					400
Gly	Ala	Val	Tyr	Arg	Lys	Ala	Leu	Val	Ile	Thr	Asn	Ser	Ala	Arg	Lys
				405					410					415	
Ser	Ser	Thr	Val	Gly	Glu	Ile	Val	Asn	Leu	Met	Ser	Val	Asp	Ala	Gln
			420					425					430		
Arg	Phe	Met	Asp	Leu	Ala	Thr	Tyr	Ile	Asn	Met	Ile	Trp	Ser	Ala	Pro
			435				440				445				
Leu	Gln	Val	Ile	Leu	Ala	Leu	Tyr	Leu	Leu	Trp	Leu	Asn	Leu	Gly	Pro
450						455					460				
Ser	Val	Leu	Ala	Gly	Val	Ala	Val	Met	Val	Leu	Met	Val	Pro	Val	Asn
465					470					475					480
Ala	Val	Met	Ala	Met	Lys	Thr	Lys	Thr	Tyr	Gln	Val	Ala	His	Met	Lys
			485						490					495	
Ser	Lys	Asp	Asn	Arg	Ile	Lys	Leu	Met	Asn	Glu	Ile	Leu	Asn	Gly	Ile
			500					505					510		
Lys	Val	Leu	Lys	Leu	Tyr	Ala	Trp	Glu	Leu	Ala	Phe	Lys	Asp	Lys	Val
515						520					525				
Leu	Ala	Ile	Arg	Gln	Glu	Glu	Leu	Lys	Val	Leu	Lys	Lys	Ser	Ala	Tyr
530						535					540				
Leu	Ser	Ala	Val	Gly	Thr	Phe	Thr	Trp	Val	Cys	Thr	Pro	Phe	Leu	Val
545					550					555					560
Ala	Leu	Cys	Thr	Phe	Ala	Val	Tyr	Val	Thr	Ile	Asp	Glu	Asn	Asn	Ile
			565						570					575	
Leu	Asp	Ala	Gln	Thr	Ala	Phe	Val	Ser	Leu	Ala	Leu	Phe	Asn	Ile	Leu
			580					585					590		
Arg	Phe	Pro	Leu	Asn	Ile	Leu	Pro	Met	Val	Ile	Ser	Ser	Ile	Val	Gln
595						600					605				
Ala	Ser	Val	Ser	Leu	Lys	Arg	Leu	Arg	Ile	Phe	Leu	Ser	His	Glu	Glu
610						615					620				
Leu	Glu	Pro	Asp	Ser	Ile	Glu	Arg	Arg	Pro	Val	Lys	Asp	Gly	Gly	Gly
625					630					635					640
Thr	Asn	Ser	Ile	Thr	Val	Arg	Asn	Ala	Thr	Phe	Thr	Trp	Ala	Arg	Ser
			645						650					655	
Asp	Pro	Pro	Thr	Leu	Asn	Gly	Ile	Thr	Phe	Ser	Ile	Pro	Glu	Gly	Ala
			660					665					670		

Leu	Val	Ala	Val	Val	Gly	Gln	Val	Gly	Cys	Gly	Lys	Ser	Ser	Leu	Leu	675	680	685
Ser	Ala	Leu	Leu	Ala	Glu	Met	Asp	Lys	Val	Glu	Gly	His	Val	Ala	Ile	690	695	700
Lys	Gly	Ser	Val	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	Gln	Asn	Asp	705	710	715
Ser	Leu	Arg	Glu	Asn	Ile	Leu	Phe	Gly	Cys	Gln	Leu	Glu	Glu	Pro	Tyr	725	730	735
Tyr	Arg	Ser	Val	Ile	Gln	Ala	Cys	Ala	Leu	Leu	Pro	Asp	Leu	Glu	Ile	740	745	750
Leu	Pro	Ser	Gly	Asp	Arg	Thr	Glu	Ile	Gly	Glu	Lys	Gly	Val	Asn	Leu	755	760	765
Ser	Gly	Gly	Gln	Lys	Gln	Arg	Val	Ser	Leu	Ala	Arg	Ala	Val	Tyr	Ser	770	775	780
Asn	Ala	Asp	Ile	Tyr	Leu	Phe	Asp	Asp	Pro	Leu	Ser	Ala	Val	Asp	Ala	785	790	795
His	Val	Gly	Lys	His	Ile	Phe	Glu	Asn	Val	Ile	Gly	Pro	Lys	Gly	Met	805	810	815
Leu	Lys	Asn	Lys	Thr	Arg	Ile	Leu	Val	Thr	His	Ser	Met	Ser	Tyr	Leu	820	825	830
Pro	Gln	Val	Asp	Val	Ile	Ile	Val	Met	Ser	Gly	Gly	Lys	Ile	Ser	Glu	835	840	845
Met	Gly	Ser	Tyr	Gln	Glu	Leu	Leu	Ala	Arg	Asp	Gly	Ala	Phe	Ala	Glu	850	855	860
Phe	Leu	Arg	Thr	Tyr	Ala	Ser	Thr	Glu	Gln	Glu	Gln	Asp	Ala	Glu	Glu	865	870	875
Asn	Gly	Val	Thr	Gly	Val	Ser	Gly	Pro	Gly	Lys	Glu	Ala	Lys	Gln	Met	885	890	895
Glu	Asn	Gly	Met	Leu	Val	Thr	Asp	Ser	Ala	Gly	Lys	Gln	Leu	Gln	Arg	900	905	910
Gln	Leu	Ser	Ser	Ser	Ser	Ser	Tyr	Ser	Gly	Asp	Ile	Ser	Arg	His	His	915	920	925
Asn	Ser	Thr	Ala	Glu	Leu	Gln	Lys	Ala	Glu	Ala	Lys	Lys	Glu	Glu	Thr	930	935	940
Trp	Lys	Leu	Met	Glu	Ala	Asp	Lys	Ala	Gln	Thr	Gly	Gln	Val	Lys	Leu	945	950	955
Ser	Val	Tyr	Trp	Asp	Tyr	Met	Lys	Ala	Ile	Gly	Leu	Phe	Ile	Ser	Phe	965	970	975

Leu Ser Ile Phe Leu Phe Met Cys Asn His Val Ser Ala Leu Ala Ser
 980 985 990
 Asn Tyr Trp Leu Ser Leu Trp Thr Asp Asp Pro Ile Val Asn Gly Thr
 995 1000 1005
 Gln Glu His Thr Lys Val Arg Leu Ser Val Tyr Gly Ala Leu Gly Ile
 1010 1015 1020
 Ser Gln Gly Ile Ala Val Phe Gly Tyr Ser Met Ala Val Ser Ile Gly
 1025 1030 1035 1040
 Gly Ile Leu Ala Ser Arg Cys Leu His Val Asp Leu Leu His Ser Ile
 1045 1050 1055
 Leu Arg Ser Pro Met Ser Phe Phe Glu Arg Thr Pro Ser Gly Asn Leu
 1060 1065 1070
 Val Asn Arg Phe Ser Lys Glu Leu Asp Thr Val Asp Ser Met Ile Pro
 1075 1080 1085
 Glu Val Ile Lys Met Phe Met Gly Ser Leu Phe Asn Val Ile Gly Ala
 1090 1095 1100
 Cys Ile Val Ile Leu Leu Ala Thr Pro Ile Ala Ala Ile Ile Ile Pro
 1105 1110 1115 1120
 Pro Leu Gly Leu Ile Tyr Phe Phe Val Gln Arg Phe Tyr Val Ala Ser
 1125 1130 1135
 Ser Arg Gln Leu Lys Arg Leu Glu Ser Val Ser Arg Ser Pro Val Tyr
 1140 1145 1150
 Ser His Phe Asn Glu Thr Leu Leu Gly Val Ser Val Ile Arg Ala Phe
 1155 1160 1165
 Glu Glu Gln Glu Arg Phe Ile His Gln Ser Asp Leu Lys Val Asp Glu
 1170 1175 1180
 Asn Gln Lys Ala Tyr Tyr Pro Ser Ile Val Ala Asn Arg Trp Leu Ala
 1185 1190 1195 1200
 Val Arg Leu Glu Cys Val Gly Asn Cys Ile Val Leu Phe Ala Ala Leu
 1205 1210 1215
 Phe Ala Val Ile Ser Arg His Ser Leu Ser Ala Gly Leu Val Gly Leu
 1220 1225 1230
 Ser Val Ser Tyr Ser Leu Gln Val Thr Thr Tyr Leu Asn Trp Leu Val
 1235 1240 1245
 Arg Met Ser Ser Glu Met Glu Thr Asn Ile Val Ala Val Glu Arg Leu
 1250 1255 1260
 Lys Glu Tyr Ser Glu Thr Glu Lys Glu Ala Pro Trp Gln Ile Gln Glu
 1265 1270 1275 1280

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<210> 7
<211> 49
<212> PRT
<213> Drosophila melanogaster

<400> 7
Val Ser Leu Val Thr Phe Ala Thr Tyr Val Leu Thr Ser Glu Ala Asn
  1           5           10          15
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Val Ser Leu Val Thr Phe Ala Thr Tyr Val Leu Thr Ser Glu Ala Asn
1 5 10 15

Gln Leu Ser Val Glu Lys Val Leu Val Ser Ile Ala Leu Phe Asp Leu
 20 25 30

Met Lys Leu Pro Leu Thr Ile Leu Pro Met Leu Ser Val Asp Ile Ala
 35 40 45

Glu

<210> 8

<211> 49

<212> PRT

<213> Drosophila melanogaster

<400> 8

Val Ser Leu Val Thr Phe Ala Thr Tyr Val Leu Ile Asp Glu Asn Asn
 1 5 10 15

Val Leu Asp Ala Thr Lys Thr Phe Val Ser Leu Ser Leu Phe Asn Ile
 20 25 30

Leu Arg Phe Pro Leu Thr Met Leu Pro Met Leu Ile Thr Asn Leu Val
 35 40 45

Gln

<210> 9

<211> 73

<212> PRT

<213> Drosophila melanogaster

<400> 9

Ala Thr Asn Phe Phe Ser Ser Leu Ala Ile Ser Leu Gly Cys Leu Lys
 1 5 10 15

Cys Ser Gln Leu Leu His Gln Thr Leu Leu Tyr Tyr Asn Leu Arg Trp
 20 25 30

Pro Met Glu Leu Phe Asp Thr Thr Pro Leu Gly Arg Ile Val Asn Arg
 35 40 45

Phe Ser Lys Asp Ile Asp Thr Ile Asp Asn Val Leu Pro Phe Asn Ile
 50 55 60

Arg Val Val Ile Gly Gln Ala Tyr Met
 65 70

<210> 10

<211> 73

<212> PRT

<213> Drosophila melanogaster

<400> 10

Val Thr Gly Tyr Leu Ser Thr Leu Ile Leu Ser Leu Gly Cys Val Tyr
 1 5 10 15

Ser Ala Arg Tyr Met His Asn Val Leu Leu His Gly Thr Leu Arg Trp
 20 25 30

Pro Met Glu Met Phe Asp Ile Thr Pro Leu Gly Arg Ile Val Asn Arg
 35 40 45

Phe Ser Lys Asp Val Asp Thr Ile Asp Asn Thr Leu Pro Leu Asn Leu
 50 55 60

Arg Val Val Ile Leu Gln Leu Phe Ala
 65 70

<210> 11

<211> 73

<212> PRT

<213> Drosophila melanogaster

<400> 11

Thr Ser Tyr Phe Phe Cys Ser Leu Thr Leu Ala Leu Gly Cys Ile Pro
 1 5 10 15

Cys Ser Lys Val Leu His Glu Thr Leu Leu Ser Tyr Val Phe Arg Trp
 20 25 30

Pro Met Glu Leu Phe Asp Thr Thr Pro Leu Gly Arg Val Val Asn Arg
 35 40 45

Phe Ser Lys Asp Val Asp Thr Ile Asp Asn Val Leu Pro Met Leu Trp
 50 55 60

Arg Met Val Ile Ser Gln Ala Phe Ala
 65 70

<210> 12

<211> 73

<212> PRT

<213> Drosophila melanogaster

<400> 12

Leu Ser Lys Tyr Leu Ser Gly Leu Ala Leu Ala Ile Gly Gly Leu His
 1 5 10 15

Cys Ser Met Asn Val Phe Asn Lys Leu Leu Asn Thr Gly Leu Lys Trp
 20 25 30

Pro Met Glu Leu Phe Asp Thr Thr Pro Leu Gly Arg Ile Leu Ser Arg
 35 40 45

Tyr Ser Lys Asp Val Asp Thr Val Asp Ser Val Leu Pro Ala Ile Thr
 50 55 60

Val Gln Leu Leu Asn Thr Cys Phe Gly
 65 70

<210> 13

<211> 74

<212> PRT

<213> *Drosophila melanogaster*

<400> 13

Val Leu Ala Tyr Phe Ala Val Val Ile Val Tyr Leu Gly Gly Phe Gln
 1 5 10 15

Ala Ala Lys Thr Ile His Asn Glu Leu Leu Ala Val Ile Ile Arg Gly
 20 25 30

Ser Val Cys Arg Phe Phe Asp Ile Thr Pro Ile Gly Arg Leu Leu Asn
 35 40 45

Ser Phe Ser Gly Asp Met Asp Val Val Asp Glu Glu Leu Pro Ala Thr
 50 55 60

Met Asp Ser Phe Met Thr Phe Ile Phe Met
 65 70

<210> 14

<211> 73

<212> PRT

<213> *Drosophila melanogaster*

<400> 14

Leu Cys Asn Tyr Gly Ala Ala Ile Ser Leu Phe Thr Ala Thr Leu His
 1 5 10 15

Ala Ser Ser Arg Val Phe His Arg Leu Phe Asn Asn Ile Met His Cys
 20 25 30

Pro Ser Glu Phe Phe Asp Thr Thr Pro Lys Gly Arg Ile Leu Asp Arg
 35 40 45

Cys Ser Ser Asp Val Asn Cys Leu Asp Leu Val Met Pro Leu Asn Ile
 50 55 60

Arg Met Val Met Ser Thr Ala Phe Gln
 65 70

<210> 15

<211> 73

<212> PRT

<213> *Drosophila melanogaster*

<400> 15

Phe Thr Ser Phe Phe Ser Asp Leu Ala Pro Ala Leu Gly Ser Leu His
 1 5 10 15

Ala Ala Lys Val Leu His Ser Met Leu Leu Glu Asn Val Leu Arg Ala
 20 25 30

Pro Met Thr Met Phe Asp Thr Thr Pro Val Gly Arg Ile Leu Ser Arg
 35 40 45

Phe Ser Lys Asp Val Glu Ser Val Asp Gln Lys Met Pro Gln Val Ile
 50 55 60

Asn Asp Cys Ile Trp Cys Ala Phe Glu
 65 70

<210> 16

<211> 1538

<212> PRT

<213> *Drosophila melanogaster*

<400> 16

Met Ala Asp Asp Thr Ser Ser Pro Met Asp Arg Phe Cys Gly Ser Thr
 1 5 10 15

Phe Trp Asn Ala Thr Glu Thr Trp Tyr Thr Asn Asp Pro Asp Phe Thr
 20 25 30

Pro Cys Phe Glu Gln Thr Ala Leu Val Trp Thr Pro Cys Ala Phe Tyr
 35 40 45

Trp Ala Phe Val Ile Phe Asp Phe Tyr Tyr Leu Lys Ala Ser Leu Asp
 50 55 60

Arg Asn Ile Pro Trp Asn Lys Leu Asn Val Ser Lys Ala Leu Val Asn
 65 70 75 80

Leu Gly Leu Leu Val Ile Thr Ala Leu Asp Leu Ile Met Ala Leu Val
 85 90 95

Lys Lys Gly Gly Asp Ser Glu Leu Pro Leu Tyr Asp Leu Asp Val Trp
 100 105 110

Gly Pro Ile Ile Lys Phe Ala Thr Phe Leu Leu Leu Phe Ile Phe Ile
 115 120 125

Pro Leu Asn Arg Lys Tyr Gly Val Gln Thr Thr Gly Cys Gln Phe Ile
 130 135 140

Phe Trp Phe Leu Leu Thr Val Leu Ser Ile Pro Arg Cys Arg Thr Glu
 145 150 155 160

Val Arg Leu Asp Ala Glu Arg Gln Lys Ile Leu Asn Ser Gln Gln Pro
 165 170 175

Ser Glu Gln Asp Phe Ser Trp Glu Glu Tyr Gln Phe Val Ser Phe Phe
 180 185 190

Ile Phe Phe Thr Phe Thr Ser Ile Met Leu Ile Leu Asn Cys Phe Ala
 195 200 205

Asp Gly Met Pro Arg Gln Thr Lys Tyr Gln Arg Gly Glu Asn Glu Ile
 210 215 220

Pro Glu Leu Ser Ala Ser Phe Leu Ser Arg Ile Thr Tyr Gln Trp Phe
 225 230 235 240

Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp	245	250	255
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile	260	265	270
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys	275	280	285
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe	290	295	300
Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser	305	310	315
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly	325	330	335
Ala	Leu	Met	Lys	Leu	Phe	Thr	Asp	Thr	Leu	Thr	Phe	Ala	Gln	Pro	Gln	340	345	350
Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro	355	360	365
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala	370	375	380
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val	385	390	395
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala	405	410	415
Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile	420	425	430
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr	435	440	445
Tyr	Leu	Asn	Met	Ile	Trp	Ser	Ala	Pro	Leu	Gln	Ile	Gly	Leu	Ala	Leu	450	455	460
Tyr	Phe	Leu	Trp	Gln	Gln	Leu	Gly	Pro	Ser	Val	Leu	Ala	Gly	Leu	Ala	465	470	475
Val	Met	Ile	Ile	Leu	Ile	Pro	Val	Asn	Gly	Val	Ile	Ala	Ser	Arg	Ile	485	490	495
Lys	Thr	Tyr	Gln	Ile	Arg	Gln	Met	Lys	Tyr	Lys	Asp	Glu	Arg	Val	Lys	500	505	510
Leu	Met	Asn	Glu	Val	Leu	Ser	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	515	520	525
Trp	Glu	Pro	Ser	Phe	Glu	Lys	Gln	Val	Leu	Asp	Ile	Arg	Asp	Lys	Glu	530	535	540

Ile	Ala	Thr	Leu	Arg	Ser	Thr	Ala	Tyr	Leu	Asn	Ala	Gly	Thr	Ser	Phe	545	550	555	560
Leu	Trp	Ser	Cys	Ala	Pro	Phe	Leu	Val	Ser	Leu	Val	Thr	Phe	Ala	Thr	565	570		575
Tyr	Val	Leu	Thr	Ser	Glu	Ala	Asn	Gln	Leu	Ser	Val	Glu	Lys	Val	Leu	580	585		590
Val	Ser	Ile	Ala	Leu	Phe	Asp	Leu	Met	Lys	Leu	Pro	Leu	Thr	Ile	Leu	595	600		605
Pro	Met	Leu	Ser	Val	Asp	Ile	Ala	Glu	Thr	Gln	Val	Ser	Val	Asn	Arg	610	615		620
Ile	Asn	Lys	Phe	Leu	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Ser	Val	Leu	625	630		635
His	Asp	Ser	Ser	Lys	Pro	His	Pro	Met	Ser	Ile	Glu	Asn	Gly	Glu	Phe	645	650		655
Ser	Trp	Gly	Asp	Glu	Ile	Thr	Leu	Arg	Asn	Ile	Asn	Ile	Glu	Val	Lys	660	665		670
Lys	Gly	Ser	Leu	Val	Ala	Leu	Val	Gly	Thr	Val	Gly	Ser	Gly	Lys	Ser	675	680		685
Ser	Val	Val	Gln	Ala	Phe	Leu	Gly	Glu	Met	Glu	Lys	Leu	Ala	Gly	Val	690	695		700
Val	Asn	Thr	Val	Gly	Lys	Leu	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	705	710		715
Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp	725	730		735
Arg	Lys	Arg	Tyr	Asn	Lys	Val	Ile	Asp	Ala	Cys	Ala	Leu	Arg	Ala	Asp	740	745		750
Ile	Asp	Ile	Leu	Ser	Ala	Gly	Asp	Leu	Thr	Glu	Ile	Gly	Glu	Lys	Gly	755	760		765
Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ser	Leu	Ala	Arg	Ala	770	775		780
Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	785	790		795
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro	805	810		815
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val	820	825		830
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu	835	840		845

Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala	850	855	860
Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu	865	870	875
Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val	885	890	895
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr	900	905	910
Glu	Ser	Leu	Ser	Asp	Ser	Ile	Ser	Val	Thr	Ser	Ala	Asp	Ser	Leu	Met	915	920	925
Gly	Gly	Gly	Gly	Ser	Leu	Arg	Arg	Arg	Thr	Lys	Arg	Gln	Asp	Ser	His	930	935	940
Asp	Ser	Val	Ala	Ser	Ala	Ala	Ser	Leu	Lys	Lys	Lys	Gln	Glu	Val	Glu	945	950	955
Gly	Lys	Leu	Ile	Glu	Thr	Glu	Lys	Ser	Gln	Thr	Gly	Gly	Val	Glu	Phe	965	970	975
Ala	Val	Tyr	Lys	His	Tyr	Ile	Lys	Ser	Val	Gly	Ile	Phe	Leu	Ser	Val	980	985	990
Ala	Thr	Leu	Val	Leu	Asn	Phe	Val	Phe	Gln	Ala	Phe	Gln	Ile	Gly	Ser	995	1000	1005
Asn	Leu	Trp	Leu	Thr	Gln	Trp	Ala	Asn	Asp	Gln	Asn	Val	Ala	Asn	Asp	1010	1015	1020
Thr	Gly	Leu	Arg	Asp	Met	Tyr	Leu	Gly	Val	Tyr	Gly	Ala	Phe	Gly	Phe	1025	1030	1035
Gly	Gln	Val	Ala	Thr	Asn	Phe	Phe	Ser	Ser	Leu	Ala	Ile	Ser	Leu	Gly	1045	1050	1055
Cys	Leu	Lys	Cys	Ser	Gln	Leu	Leu	His	Gln	Thr	Leu	Leu	Tyr	Tyr	Asn	1060	1065	1070
Leu	Arg	Trp	Pro	Met	Glu	Leu	Phe	Asp	Thr	Thr	Pro	Leu	Gly	Arg	Ile	1075	1080	1085
Val	Asn	Arg	Phe	Ser	Lys	Asp	Ile	Asp	Thr	Ile	Asp	Asn	Val	Leu	Pro	1090	1095	1100
Phe	Asn	Ile	Arg	Val	Val	Ile	Gly	Gln	Ala	Tyr	Met	Val	Leu	Ala	Thr	1105	1110	1115
Ile	Val	Val	Ile	Ser	Leu	Ser	Thr	Pro	Ile	Phe	Leu	Ala	Val	Ile	Val	1125	1130	1135
Pro	Ile	Ala	Phe	Leu	Tyr	Tyr	Phe	Ala	Gln	Arg	Phe	Tyr	Val	Ala	Thr	1140	1145	1150

Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr
 1155 1160 1165
 Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala Tyr
 1170 1175 1180
 Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp Lys
 1185 1190 1195 1200
 Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu Ala
 1205 1210 1215
 Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser Leu
 1220 1225 1230
 Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu Ser
 1235 1240 1245
 Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val Arg
 1250 1255 1260
 Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile Lys
 1265 1270 1275 1280
 Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln Asp
 1285 1290 1295
 Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe Gln
 1300 1305 1310
 Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg Gly
 1315 1320 1325
 Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly Arg
 1330 1335 1340
 Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile Ile
 1345 1350 1355 1360
 Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala Ser
 1365 1370 1375
 Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln Asp
 1380 1385 1390
 Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe Glu
 1395 1400 1405
 Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His Leu
 1410 1415 1420
 Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile Ala
 1425 1430 1435 1440
 Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu
 1445 1450 1455

Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu Ala
 1460 1465 1470

Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr Ile
 1475 1480 1485

Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg Leu
 1490 1495 1500

Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly Gln
 1505 1510 1515 1520

Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys Ser
 1525 1530 1535

Ala Phe

<210> 17

<211> 1538

<212> PRT

<213> *Drosophila melanogaster*

<400> 17

Met Ala Asp Asp Thr Ser Ser Pro Met Asp Arg Phe Cys Gly Ser Thr
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Phe Trp Asn Ala Thr Glu Thr Trp Tyr Thr Asn Asp Pro Asp Phe Thr
 20 25 30

Pro Cys Phe Glu Gln Thr Ala Leu Val Trp Thr Pro Cys Ala Phe Tyr
 35 40 45

Trp Ala Phe Val Ile Phe Asp Phe Tyr Tyr Leu Lys Ala Ser Leu Asp
 50 55 60

Arg Asn Ile Pro Trp Asn Lys Leu Asn Val Ser Lys Ala Leu Val Asn
 65 70 75 80

Leu Gly Leu Leu Val Ile Thr Ala Leu Asp Leu Ile Met Ala Leu Val
 85 90 95

Lys Lys Gly Gly Asp Ser Glu Leu Pro Leu Tyr Asp Leu Asp Val Trp
 100 105 110

Gly Pro Ile Ile Lys Phe Ala Thr Phe Leu Leu Leu Phe Ile Phe Ile
 115 120 125

Pro Leu Asn Arg Lys Tyr Gly Val Gln Thr Thr Gly Cys Gln Phe Ile
 130 135 140

Phe Trp Phe Leu Leu Thr Val Leu Ser Ile Pro Arg Cys Arg Thr Glu
 145 150 155 160

Val Arg Leu Asp Ala Glu Arg Gln Lys Ile Leu Asn Ser Gln Gln Pro
 165 170 175

Ser	Glu	Gln	Asp	Phe	Ser	Trp	Glu	Glu	Tyr	Gln	Phe	Val	Ser	Phe	Phe	180	185	190
Ile	Phe	Phe	Thr	Phe	Thr	Ser	Ile	Met	Leu	Ile	Leu	Asn	Cys	Phe	Ala	195	200	205
Asp	Gly	Met	Pro	Arg	Gln	Thr	Lys	Tyr	Gln	Arg	Gly	Glu	Asn	Glu	Ile	210	215	220
Pro	Glu	Leu	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Tyr	Gln	Trp	Phe	225	230	235
Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp	245	250	255
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile	260	265	270
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys	275	280	285
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe	290	295	300
Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser	305	310	315
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly	325	330	335
Ala	Leu	Met	Lys	Leu	Phe	Thr	Asp	Thr	Leu	Thr	Phe	Ala	Gln	Pro	Gln	340	345	350
Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro	355	360	365
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala	370	375	380
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val	385	390	395
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala	405	410	415
Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile	420	425	430
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr	435	440	445
Tyr	Leu	Asn	Met	Ile	Trp	Ser	Ala	Pro	Leu	Gln	Ile	Gly	Leu	Ala	Leu	450	455	460
Tyr	Phe	Leu	Trp	Gln	Gln	Leu	Gly	Pro	Ser	Val	Leu	Ala	Gly	Leu	Ala	465	470	475
																		480

Val	Met	Ile	Ile	Leu	Ile	Pro	Val	Asn	Gly	Val	Ile	Ala	Ser	Arg	Ile	485	490	495
Lys	Thr	Tyr	Gln	Ile	Arg	Gln	Met	Lys	Tyr	Lys	Asp	Glu	Arg	Val	Lys	500	505	510
Leu	Met	Asn	Glu	Val	Leu	Ser	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	515	520	525
Trp	Glu	Pro	Ser	Phe	Glu	Lys	Gln	Val	Leu	Asp	Ile	Arg	Asp	Lys	Glu	530	535	540
Ile	Ala	Thr	Leu	Arg	Ser	Thr	Ala	Tyr	Leu	Asn	Ala	Gly	Thr	Ser	Phe	545	550	555
Leu	Trp	Ser	Cys	Ala	Pro	Phe	Leu	Val	Ser	Leu	Val	Thr	Phe	Ala	Thr	565	570	575
Tyr	Val	Leu	Thr	Ser	Glu	Ala	Asn	Gln	Leu	Ser	Val	Glu	Lys	Val	Leu	580	585	590
Val	Ser	Ile	Ala	Leu	Phe	Asp	Leu	Met	Lys	Leu	Pro	Leu	Thr	Ile	Leu	595	600	605
Pro	Met	Leu	Ser	Val	Asp	Ile	Ala	Glu	Thr	Gln	Val	Ser	Val	Asn	Arg	610	615	620
Ile	Asn	Lys	Phe	Leu	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Ser	Val	Leu	625	630	635
His	Asp	Ser	Ser	Lys	Pro	His	Pro	Met	Ser	Ile	Glu	Asn	Gly	Glu	Phe	645	650	655
Ser	Trp	Gly	Asp	Glu	Ile	Thr	Leu	Arg	Asn	Ile	Asn	Ile	Glu	Val	Lys	660	665	670
Lys	Gly	Ser	Leu	Val	Ala	Leu	Val	Gly	Thr	Val	Gly	Ser	Gly	Lys	Ser	675	680	685
Ser	Val	Val	Gln	Ala	Phe	Leu	Gly	Glu	Met	Glu	Lys	Leu	Ala	Gly	Val	690	695	700
Val	Asn	Thr	Val	Gly	Lys	Leu	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	705	710	715
Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp	725	730	735
Arg	Lys	Arg	Tyr	Asn	Lys	Val	Ile	Asp	Ala	Cys	Ala	Leu	Arg	Ala	Asp	740	745	750
Ile	Asp	Ile	Leu	Ser	Ala	Gly	Asp	Leu	Thr	Glu	Ile	Gly	Glu	Lys	Gly	755	760	765
Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ser	Leu	Ala	Arg	Ala	770	775	780

Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	785	790	795	800
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro	805	810	815	
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val	820	825	830	
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu	835	840	845	
Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala	850	855	860	
Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu	865	870	875	880
Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val	885	890	895	
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr	900	905	910	
Glu	Ser	Leu	Ser	Asp	Ser	Ile	Ser	Val	Thr	Ser	Ala	Asp	Ser	Leu	Met	915	920	925	
Gly	Gly	Gly	Gly	Ser	Leu	Arg	Arg	Arg	Thr	Lys	Arg	Gln	Asp	Ser	His	930	935	940	
Asp	Ser	Val	Ala	Ser	Ala	Ala	Ser	Leu	Lys	Lys	Lys	Gln	Glu	Val	Glu	945	950	955	960
Gly	Lys	Leu	Ile	Glu	Thr	Glu	Lys	Ser	Gln	Thr	Gly	Gly	Val	Glu	Phe	965	970	975	
Ala	Val	Tyr	Lys	His	Tyr	Ile	Lys	Ser	Val	Gly	Ile	Phe	Leu	Ser	Val	980	985	990	
Ala	Thr	Leu	Val	Leu	Asn	Phe	Val	Phe	Gln	Ala	Phe	Gln	Ile	Gly	Ser	995	1000	1005	
Asn	Leu	Trp	Leu	Thr	Gln	Trp	Ala	Asn	Asp	Gln	Asn	Val	Ala	Asn	Asp	1010	1015	1020	
Thr	Gly	Leu	Arg	Asp	Met	Tyr	Leu	Gly	Val	Tyr	Gly	Ala	Phe	Gly	Phe	1025	1030	1035	1040
Gly	Gln	Val	Val	Thr	Gly	Tyr	Leu	Ser	Thr	Leu	Ile	Leu	Ser	Leu	Gly	1045	1050	1055	
Cys	Val	Tyr	Ser	Ala	Arg	Tyr	Met	His	Asn	Val	Leu	Leu	His	Gly	Thr	1060	1065	1070	
Leu	Arg	Trp	Pro	Met	Glu	Met	Phe	Asp	Ile	Thr	Pro	Leu	Gly	Arg	Ile	1075	1080	1085	

Val Asn Arg Phe Ser Lys Asp Val Asp Thr Ile Asp Asn Thr Leu Pro
 1090 1095 1100
 Leu Asn Leu Arg Val Val Ile Leu Gln Leu Phe Ala Val Leu Ala Thr
 1105 1110 1115 1120
 Ile Val Val Ile Ser Leu Ser Thr Pro Ile Phe Leu Ala Val Ile Val
 1125 1130 1135
 Pro Ile Ala Phe Leu Tyr Tyr Phe Ala Gln Arg Phe Tyr Val Ala Thr
 1140 1145 1150
 Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr
 1155 1160 1165
 Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala Tyr
 1170 1175 1180
 Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp Lys
 1185 1190 1195 1200
 Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu Ala
 1205 1210 1215
 Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser Leu
 1220 1225 1230
 Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu Ser
 1235 1240 1245
 Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val Arg
 1250 1255 1260
 Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile Lys
 1265 1270 1275 1280
 Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln Asp
 1285 1290 1295
 Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe Gln
 1300 1305 1310
 Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg Gly
 1315 1320 1325
 Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly Arg
 1330 1335 1340
 Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile Ile
 1345 1350 1355 1360
 Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala Ser
 1365 1370 1375
 Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln Asp
 1380 1385 1390

Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe Glu
 1395 1400 1405
 Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His Leu
 1410 1415 1420
 Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile Ala
 1425 1430 1435 1440
 Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu
 1445 1450 1455
 Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu Ala
 1460 1465 1470
 Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr Ile
 1475 1480 1485
 Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg Leu
 1490 1495 1500
 Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly Gln
 1505 1510 1515 1520
 Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys Ser
 1525 1530 1535

Ala Phe

<210> 18

<211> 1538

<212> PRT

<213> *Drosophila melanogaster*

<400> 18

Met Ala Asp Asp Thr Ser Ser Pro Met Asp Arg Phe Cys Gly Ser Thr
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 Phe Trp Asn Ala Thr Glu Thr Trp Tyr Thr Asn Asp Pro Asp Phe Thr
 20 25 30
 Pro Cys Phe Glu Gln Thr Ala Leu Val Trp Thr Pro Cys Ala Phe Tyr
 35 40 45
 Trp Ala Phe Val Ile Phe Asp Phe Tyr Tyr Leu Lys Ala Ser Leu Asp
 50 55 60
 Arg Asn Ile Pro Trp Asn Lys Leu Asn Val Ser Lys Ala Leu Val Asn
 65 70 75 80
 Leu Gly Leu Leu Val Ile Thr Ala Leu Asp Leu Ile Met Ala Leu Val
 85 90 95
 Lys Lys Gly Gly Asp Ser Glu Leu Pro Leu Tyr Asp Leu Asp Val Trp
 100 105 110

Gly	Pro	Ile	Ile	Lys	Phe	Ala	Thr	Phe	Leu	Leu	Leu	Phe	Ile	Phe	Ile		
		115					120					125					
Pro	Leu	Asn	Arg	Lys	Tyr	Gly	Val	Gln	Thr	Thr	Gly	Cys	Gln	Phe	Ile		
	130					135					140						
Phe	Trp	Phe	Leu	Leu	Thr	Val	Leu	Ser	Ile	Pro	Arg	Cys	Arg	Thr	Glu		
145					150					155					160		
Val	Arg	Leu	Asp	Ala	Glu	Arg	Gln	Lys	Ile	Leu	Asn	Ser	Gln	Gln	Pro		
				165					170						175		
Ser	Glu	Gln	Asp	Phe	Ser	Trp	Glu	Glu	Tyr	Gln	Phe	Val	Ser	Phe	Phe		
			180					185					190				
Ile	Phe	Phe	Thr	Phe	Thr	Ser	Ile	Met	Leu	Ile	Leu	Asn	Cys	Phe	Ala		
		195					200					205					
Asp	Gly	Met	Pro	Arg	Gln	Thr	Lys	Tyr	Gln	Arg	Gly	Glu	Asn	Glu	Ile		
	210					215					220						
Pro	Glu	Leu	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Tyr	Gln	Trp	Phe		
225					230					235					240		
Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp		
				245					250					255			
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile		
			260					265						270			
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys		
		275					280					285					
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe		
	290					295					300						
Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser		
305					310					315					320		
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly		
				325					330					335			
Ala	Leu	Met	Lys	Leu	Phe	Thr	Asp	Thr	Leu	Thr	Phe	Ala	Gln	Pro	Gln		
			340					345					350				
Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro		
		355					360					365					
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala		
	370					375					380						
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val		
385					390					395					400		
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala		
				405					410					415			

Leu Arg Ile Ser Asn Ser Thr Lys Lys Glu Ser Thr Val Gly Glu Ile
 420 425 430
 Val Asn Leu Met Ala Val Asp Ala Gln Arg Phe Met Glu Leu Thr Thr
 435 440 445
 Tyr Leu Asn Met Ile Trp Ser Ala Pro Leu Gln Ile Gly Leu Ala Leu
 450 455 460
 Tyr Phe Leu Trp Gln Gln Leu Gly Pro Ser Val Leu Ala Gly Leu Ala
 465 470 475 480
 Val Met Ile Ile Leu Ile Pro Val Asn Gly Val Ile Ala Ser Arg Ile
 485 490 495
 Lys Thr Tyr Gln Ile Arg Gln Met Lys Tyr Lys Asp Glu Arg Val Lys
 500 505 510
 Leu Met Asn Glu Val Leu Ser Gly Ile Lys Val Leu Lys Leu Tyr Ala
 515 520 525
 Trp Glu Pro Ser Phe Glu Lys Gln Val Leu Asp Ile Arg Asp Lys Glu
 530 535 540
 Ile Ala Thr Leu Arg Ser Thr Ala Tyr Leu Asn Ala Gly Thr Ser Phe
 545 550 555 560
 Leu Trp Ser Cys Ala Pro Phe Leu Val Ser Leu Val Thr Phe Ala Thr
 565 570 575
 Tyr Val Leu Thr Ser Glu Ala Asn Gln Leu Ser Val Glu Lys Val Leu
 580 585 590
 Val Ser Ile Ala Leu Phe Asp Leu Met Lys Leu Pro Leu Thr Ile Leu
 595 600 605
 Pro Met Leu Ser Val Asp Ile Ala Glu Thr Gln Val Ser Val Asn Arg
 610 615 620
 Ile Asn Lys Phe Leu Asn Ser Glu Glu Leu Asp Pro Asn Ser Val Leu
 625 630 635 640
 His Asp Ser Ser Lys Pro His Pro Met Ser Ile Glu Asn Gly Glu Phe
 645 650 655
 Ser Trp Gly Asp Glu Ile Thr Leu Arg Asn Ile Asn Ile Glu Val Lys
 660 665 670
 Lys Gly Ser Leu Val Ala Leu Val Gly Thr Val Gly Ser Gly Lys Ser
 675 680 685
 Ser Val Val Gln Ala Phe Leu Gly Glu Met Glu Lys Leu Ala Gly Val
 690 695 700
 Val Asn Thr Val Gly Lys Leu Ala Tyr Val Pro Gln Gln Ala Trp Ile
 705 710 715 720

Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp	725	730	735
Arg	Lys	Arg	Tyr	Asn	Lys	Val	Ile	Asp	Ala	Cys	Ala	Leu	Arg	Ala	Asp	740	745	750
Ile	Asp	Ile	Leu	Ser	Ala	Gly	Asp	Leu	Thr	Glu	Ile	Gly	Glu	Lys	Gly	755	760	765
Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ser	Leu	Ala	Arg	Ala	770	775	780
Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	785	790	800
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro	805	810	815
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val	820	825	830
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu	835	840	845
Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala	850	855	860
Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu	865	870	875
Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val	885	890	895
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr	900	905	910
Glu	Ser	Leu	Ser	Asp	Ser	Ile	Ser	Val	Thr	Ser	Ala	Asp	Ser	Leu	Met	915	920	925
Gly	Gly	Gly	Gly	Ser	Leu	Arg	Arg	Arg	Thr	Lys	Arg	Gln	Asp	Ser	His	930	935	940
Asp	Ser	Val	Ala	Ser	Ala	Ala	Ser	Leu	Lys	Lys	Lys	Gln	Glu	Val	Glu	945	950	955
Gly	Lys	Leu	Ile	Glu	Thr	Glu	Lys	Ser	Gln	Thr	Gly	Gly	Val	Glu	Phe	965	970	975
Ala	Val	Tyr	Lys	His	Tyr	Ile	Lys	Ser	Val	Gly	Ile	Phe	Leu	Ser	Val	980	985	990
Ala	Thr	Leu	Val	Leu	Asn	Phe	Val	Phe	Gln	Ala	Phe	Gln	Ile	Gly	Ser	995	1000	1005
Asn	Leu	Trp	Leu	Thr	Gln	Trp	Ala	Asn	Asp	Gln	Asn	Val	Ala	Asn	Asp	1010	1015	1020

Thr Gly Leu Arg Asp Met Tyr Leu Gly Val Tyr Gly Ala Phe Gly Phe
 1025 1030 1035 1040
 Gly Gln Val Thr Ser Tyr Phe Phe Cys Ser Leu Thr Leu Ala Leu Gly
 1045 1050 1055
 Cys Ile Phe Cys Ser Lys Val Leu His Glu Thr Leu Leu Ser Tyr Val
 1060 1065 1070
 Phe Arg Trp Pro Met Glu Leu Phe Asp Thr Thr Pro Leu Gly Arg Val
 1075 1080 1085
 Val Asn Arg Phe Ser Lys Asp Val Asp Thr Ile Asp Asn Val Leu Pro
 1090 1095 1100
 Met Leu Trp Arg Met Val Ile Ser Gln Ala Phe Ala Val Leu Ala Thr
 1105 1110 1115 1120
 Ile Val Val Ile Ser Leu Ser Thr Pro Ile Phe Leu Ala Val Ile Val
 1125 1130 1135
 Pro Ile Ala Phe Leu Tyr Tyr Phe Ala Gln Arg Phe Tyr Val Ala Thr
 1140 1145 1150
 Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr
 1155 1160 1165
 Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala Tyr
 1170 1175 1180
 Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp Lys
 1185 1190 1195 1200
 Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu Ala
 1205 1210 1215
 Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser Leu
 1220 1225 1230
 Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu Ser
 1235 1240 1245
 Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val Arg
 1250 1255 1260
 Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile Lys
 1265 1270 1275 1280
 Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln Asp
 1285 1290 1295
 Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe Gln
 1300 1305 1310
 Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg Gly
 1315 1320 1325

Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly Arg
 1330 1335 1340

Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile Ile
 1345 1350 1355 1360

Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala Ser
 1365 1370 1375

Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln Asp
 1380 1385 1390

Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe Glu
 1395 1400 1405

Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His Leu
 1410 1415 1420

Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile Ala
 1425 1430 1435 1440

Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu
 1445 1450 1455

Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu Ala
 1460 1465 1470

Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr Ile
 1475 1480 1485

Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg Leu
 1490 1495 1500

Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly Gln
 1505 1510 1515 1520

Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys Ser
 1525 1530 1535

Ala Phe

<210> 19

<211> 1538

<212> PRT

<213> *Drosophila melanogaster*

<400> 19

Met Ala Asp Asp Thr Ser Ser Pro Met Asp Arg Phe Cys Gly Ser Thr
 1 5 10 15

Phe Trp Asn Ala Thr Glu Thr Trp Tyr Thr Asn Asp Pro Asp Phe Thr
 20 25 30

Pro Cys Phe Glu Gln Thr Ala Leu Val Trp Thr Pro Cys Ala Phe Tyr
 35 40 45

Trp Ala Phe Val Ile Phe Asp Phe Tyr Tyr Leu Lys Ala Ser Leu Asp
 50 55 60
 Arg Asn Ile Pro Trp Asn Lys Leu Asn Val Ser Lys Ala Leu Val Asn
 65 70 75 80
 Leu Gly Leu Leu Val Ile Thr Ala Leu Asp Leu Ile Met Ala Leu Val
 85 90 95
 Lys Lys Gly Gly Asp Ser Glu Leu Pro Leu Tyr Asp Leu Asp Val Trp
 100 105 110
 Gly Pro Ile Ile Lys Phe Ala Thr Phe Leu Leu Leu Phe Ile Phe Ile
 115 120 125
 Pro Leu Asn Arg Lys Tyr Gly Val Gln Thr Thr Gly Cys Gln Phe Ile
 130 135 140
 Phe Trp Phe Leu Leu Thr Val Leu Ser Ile Pro Arg Cys Arg Thr Glu
 145 150 155 160
 Val Arg Leu Asp Ala Glu Arg Gln Lys Ile Leu Asn Ser Gln Gln Pro
 165 170 175
 Ser Glu Gln Asp Phe Ser Trp Glu Glu Tyr Gln Phe Val Ser Phe Phe
 180 185 190
 Ile Phe Phe Thr Phe Thr Ser Ile Met Leu Ile Leu Asn Cys Phe Ala
 195 200 205
 Asp Gly Met Pro Arg Gln Thr Lys Tyr Gln Arg Gly Glu Asn Glu Ile
 210 215 220
 Pro Glu Leu Ser Ala Ser Phe Leu Ser Arg Ile Thr Tyr Gln Trp Phe
 225 230 235 240
 Asp Lys Met Ala Leu Lys Gly Tyr Arg Asn Pro Leu Glu Glu Lys Asp
 245 250 255
 Leu Trp Asp Leu Arg Pro Gln Asp Ser Cys Ser Glu Val Met Pro Ile
 260 265 270
 Phe Ala His His Trp Asn Gln Asn Val Arg Lys Asn Tyr Lys Asn Lys
 275 280 285
 Ala Arg Val Glu Pro Lys Ala Gln Phe Ser Asn Gly Asn Val Thr Phe
 290 295 300
 Glu Asn Pro His Gly Glu Lys Asn Gly Arg Lys Lys Gly Met Ala Ser
 305 310 315 320
 Ile Met Pro Pro Ile Tyr Lys Ser Phe Gly Gly Val Phe Leu Phe Gly
 325 330 335
 Ala Leu Met Lys Leu Phe Thr Asp Thr Leu Thr Phe Ala Gln Pro Gln
 340 345 350

Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro	355	360	365	
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala	370	375	380	
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val	385	390	395	400
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala	405	410	415	
Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile	420	425	430	
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr	435	440	445	
Tyr	Leu	Asn	Met	Ile	Trp	Ser	Ala	Pro	Leu	Gln	Ile	Gly	Leu	Ala	Leu	450	455	460	
Tyr	Phe	Leu	Trp	Gln	Gln	Leu	Gly	Pro	Ser	Val	Leu	Ala	Gly	Leu	Ala	465	470	475	480
Val	Met	Ile	Ile	Leu	Ile	Pro	Val	Asn	Gly	Val	Ile	Ala	Ser	Arg	Ile	485	490	495	
Lys	Thr	Tyr	Gln	Ile	Arg	Gln	Met	Lys	Tyr	Lys	Asp	Glu	Arg	Val	Lys	500	505	510	
Leu	Met	Asn	Glu	Val	Leu	Ser	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	515	520	525	
Trp	Glu	Pro	Ser	Phe	Glu	Lys	Gln	Val	Leu	Asp	Ile	Arg	Asp	Lys	Glu	530	535	540	
Ile	Ala	Thr	Leu	Arg	Ser	Thr	Ala	Tyr	Leu	Asn	Ala	Gly	Thr	Ser	Phe	545	550	555	560
Leu	Trp	Ser	Cys	Ala	Pro	Phe	Leu	Val	Ser	Leu	Val	Thr	Phe	Ala	Thr	565	570	575	
Tyr	Val	Leu	Thr	Ser	Glu	Ala	Asn	Gln	Leu	Ser	Val	Glu	Lys	Val	Leu	580	585	590	
Val	Ser	Ile	Ala	Leu	Phe	Asp	Leu	Met	Lys	Leu	Pro	Leu	Thr	Ile	Leu	595	600	605	
Pro	Met	Leu	Ser	Val	Asp	Ile	Ala	Glu	Thr	Gln	Val	Ser	Val	Asn	Arg	610	615	620	
Ile	Asn	Lys	Phe	Leu	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Ser	Val	Leu	625	630	635	640
His	Asp	Ser	Ser	Lys	Pro	His	Pro	Met	Ser	Ile	Glu	Asn	Gly	Glu	Phe	645	650	655	

Ser	Trp	Gly	Asp	Glu	Ile	Thr	Leu	Arg	Asn	Ile	Asn	Ile	Glu	Val	Lys	660	665	670
Lys	Gly	Ser	Leu	Val	Ala	Leu	Val	Gly	Thr	Val	Gly	Ser	Gly	Lys	Ser	675	680	685
Ser	Val	Val	Gln	Ala	Phe	Leu	Gly	Glu	Met	Glu	Lys	Leu	Ala	Gly	Val	690	695	700
Val	Asn	Thr	Val	Gly	Lys	Leu	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	705	710	715
Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp	725	730	735
Arg	Lys	Arg	Tyr	Asn	Lys	Val	Ile	Asp	Ala	Cys	Ala	Leu	Arg	Ala	Asp	740	745	750
Ile	Asp	Ile	Leu	Ser	Ala	Gly	Asp	Leu	Thr	Glu	Ile	Gly	Glu	Lys	Gly	755	760	765
Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ser	Leu	Ala	Arg	Ala	770	775	780
Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	785	790	795
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro	805	810	815
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val	820	825	830
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu	835	840	845
Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala	850	855	860
Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu	865	870	875
Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val	885	890	895
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr	900	905	910
Glu	Ser	Leu	Ser	Asp	Ser	Ile	Ser	Val	Thr	Ser	Ala	Asp	Ser	Leu	Met	915	920	925
Gly	Gly	Gly	Gly	Ser	Leu	Arg	Arg	Arg	Thr	Lys	Arg	Gln	Asp	Ser	His	930	935	940
Asp	Ser	Val	Ala	Ser	Ala	Ala	Ser	Leu	Lys	Lys	Lys	Gln	Glu	Val	Glu	945	950	955

Gly Lys Leu Ile Glu Thr Glu Lys Ser Gln Thr Gly Gly Val Glu Phe
 965 970 975
 Ala Val Tyr Lys His Tyr Ile Lys Ser Val Gly Ile Phe Leu Ser Val
 980 985 990
 Ala Thr Leu Val Leu Asn Phe Val Phe Gln Ala Phe Gln Ile Gly Ser
 995 1000 1005
 Asn Leu Trp Leu Thr Gln Trp Ala Asn Asp Gln Asn Val Ala Asn Asp
 1010 1015 1020
 Thr Gly Leu Arg Asp Met Tyr Leu Gly Val Tyr Gly Ala Phe Gly Phe
 1025 1030 1035 1040
 Gly Gln Val Leu Ser Lys Tyr Leu Ser Gly Leu Ala Leu Ala Ile Gly
 1045 1050 1055
 Gly Leu His Cys Ser Met Asn Val Phe Asn Lys Leu Leu Asn Thr Gly
 1060 1065 1070
 Leu Lys Trp Pro Met Glu Leu Phe Asp Thr Thr Pro Leu Gly Arg Ile
 1075 1080 1085
 Leu Ser Arg Tyr Ser Lys Asp Val Asp Thr Val Asp Ser Val Leu Pro
 1090 1095 1100
 Ala Ile Thr Val Gln Leu Leu Asn Thr Cys Phe Gly Val Leu Ala Thr
 1105 1110 1115 1120
 Ile Val Val Ile Ser Leu Ser Thr Pro Ile Phe Leu Ala Val Ile Val
 1125 1130 1135
 Pro Ile Ala Phe Leu Tyr Tyr Phe Ala Gln Arg Phe Tyr Val Ala Thr
 1140 1145 1150
 Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr
 1155 1160 1165
 Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala Tyr
 1170 1175 1180
 Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp Lys
 1185 1190 1195 1200
 Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu Ala
 1205 1210 1215
 Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser Leu
 1220 1225 1230
 Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu Ser
 1235 1240 1245
 Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val Arg
 1250 1255 1260

Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile Lys
 1265 1270 1275 1280
 Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln Asp
 1285 1290 1295
 Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe Gln
 1300 1305 1310
 Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg Gly
 1315 1320 1325
 Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly Arg
 1330 1335 1340
 Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile Ile
 1345 1350 1355 1360
 Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala Ser
 1365 1370 1375
 Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln Asp
 1380 1385 1390
 Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe Glu
 1395 1400 1405
 Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His Leu
 1410 1415 1420
 Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile Ala
 1425 1430 1435 1440
 Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu
 1445 1450 1455
 Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu Ala
 1460 1465 1470
 Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr Ile
 1475 1480 1485
 Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg Leu
 1490 1495 1500
 Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly Gln
 1505 1510 1515 1520
 Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys Ser
 1525 1530 1535

Ala Phe

<210> 20

<211> 1539

<212> PRT

<213> *Drosophila melanogaster*

<400> 20

Met	Ala	Asp	Asp	Thr	Ser	Ser	Pro	Met	Asp	Arg	Phe	Cys	Gly	Ser	Thr
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Phe	Trp	Asn	Ala	Thr	Glu	Thr	Trp	Tyr	Thr	Asn	Asp	Pro	Asp	Phe	Thr
			20					25					30		
Pro	Cys	Phe	Glu	Gln	Thr	Ala	Leu	Val	Trp	Thr	Pro	Cys	Ala	Phe	Tyr
		35					40					45			
Trp	Ala	Phe	Val	Ile	Phe	Asp	Phe	Tyr	Tyr	Leu	Lys	Ala	Ser	Leu	Asp
	50					55					60				
Arg	Asn	Ile	Pro	Trp	Asn	Lys	Leu	Asn	Val	Ser	Lys	Ala	Leu	Val	Asn
	65				70					75					80
Leu	Gly	Leu	Leu	Val	Ile	Thr	Ala	Leu	Asp	Leu	Ile	Met	Ala	Leu	Val
				85					90						95
Lys	Lys	Gly	Gly	Asp	Ser	Glu	Leu	Pro	Leu	Tyr	Asp	Leu	Asp	Val	Trp
		100						105					110		
Gly	Pro	Ile	Ile	Lys	Phe	Ala	Thr	Phe	Leu	Leu	Leu	Phe	Ile	Phe	Ile
		115					120					125			
Pro	Leu	Asn	Arg	Lys	Tyr	Gly	Val	Gln	Thr	Thr	Gly	Cys	Gln	Phe	Ile
	130					135					140				
Phe	Trp	Phe	Leu	Leu	Thr	Val	Leu	Ser	Ile	Pro	Arg	Cys	Arg	Thr	Glu
	145				150					155					160
Val	Arg	Leu	Asp	Ala	Glu	Arg	Gln	Lys	Ile	Leu	Asn	Ser	Gln	Gln	Pro
			165					170						175	
Ser	Glu	Gln	Asp	Phe	Ser	Trp	Glu	Glu	Tyr	Gln	Phe	Val	Ser	Phe	Phe
			180					185					190		
Ile	Phe	Phe	Thr	Phe	Thr	Ser	Ile	Met	Leu	Ile	Leu	Asn	Cys	Phe	Ala
		195					200					205			
Asp	Gly	Met	Pro	Arg	Gln	Thr	Lys	Tyr	Gln	Arg	Gly	Glu	Asn	Glu	Ile
	210					215					220				
Pro	Glu	Leu	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Tyr	Gln	Trp	Phe
	225				230					235					240
Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp
			245						250					255	
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile
		260						265					270		
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys
		275					280					285			
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe
	290					295					300				

Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser	305	310	315	320
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly	325	330	335	
Ala	Leu	Met	Lys	Leu	Phe	Thr	Asp	Thr	Leu	Thr	Phe	Ala	Gln	Pro	Gln	340	345	350	
Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro	355	360	365	
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala	370	375	380	
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val	385	390	395	400
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala	405	410	415	
Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile	420	425	430	
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr	435	440	445	
Tyr	Leu	Asn	Met	Ile	Trp	Ser	Ala	Pro	Leu	Gln	Ile	Gly	Leu	Ala	Leu	450	455	460	
Tyr	Phe	Leu	Trp	Gln	Gln	Gly	Pro	Ser	Val	Leu	Ala	Gly	Leu	Ala		465	470	475	480
Val	Met	Ile	Ile	Leu	Ile	Pro	Val	Asn	Gly	Val	Ile	Ala	Ser	Arg	Ile	485	490	495	
Lys	Thr	Tyr	Gln	Ile	Arg	Gln	Met	Lys	Tyr	Lys	Asp	Glu	Arg	Val	Lys	500	505	510	
Leu	Met	Asn	Glu	Val	Leu	Ser	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	515	520	525	
Trp	Glu	Pro	Ser	Phe	Glu	Lys	Gln	Val	Leu	Asp	Ile	Arg	Asp	Lys	Glu	530	535	540	
Ile	Ala	Thr	Leu	Arg	Ser	Thr	Ala	Tyr	Leu	Asn	Ala	Gly	Thr	Ser	Phe	545	550	555	560
Leu	Trp	Ser	Cys	Ala	Pro	Phe	Leu	Val	Ser	Leu	Val	Thr	Phe	Ala	Thr	565	570	575	
Tyr	Val	Leu	Thr	Ser	Glu	Ala	Asn	Gln	Leu	Ser	Val	Glu	Lys	Val	Leu	580	585	590	
Val	Ser	Ile	Ala	Leu	Phe	Asp	Leu	Met	Lys	Leu	Pro	Leu	Thr	Ile	Leu	595	600	605	

Pro	Met	Leu	Ser	Val	Asp	Ile	Ala	Glu	Thr	Gln	Val	Ser	Val	Asn	Arg	610	615	620
Ile	Asn	Lys	Phe	Leu	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Ser	Val	Leu	625	630	635
His	Asp	Ser	Ser	Lys	Pro	His	Pro	Met	Ser	Ile	Glu	Asn	Gly	Glu	Phe	645	650	655
Ser	Trp	Gly	Asp	Glu	Ile	Thr	Leu	Arg	Asn	Ile	Asn	Ile	Glu	Val	Lys	660	665	670
Lys	Gly	Ser	Leu	Val	Ala	Leu	Val	Gly	Thr	Val	Gly	Ser	Gly	Lys	Ser	675	680	685
Ser	Val	Val	Gln	Ala	Phe	Leu	Gly	Glu	Met	Glu	Lys	Leu	Ala	Gly	Val	690	695	700
Val	Asn	Thr	Val	Gly	Lys	Leu	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	705	710	715
Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp	725	730	735
Arg	Lys	Arg	Tyr	Asn	Lys	Val	Ile	Asp	Ala	Cys	Ala	Leu	Arg	Ala	Asp	740	745	750
Ile	Asp	Ile	Leu	Ser	Ala	Gly	Asp	Leu	Thr	Glu	Ile	Gly	Glu	Lys	Gly	755	760	765
Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ser	Leu	Ala	Arg	Ala	770	775	780
Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	785	790	795
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro	805	810	815
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val	820	825	830
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu	835	840	845
Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala	850	855	860
Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu	865	870	875
Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val	885	890	895
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr	900	905	910

Glu Ser Leu Ser Asp Ser Ile Ser Val Thr Ser Ala Asp Ser Leu Met
 915 920 925
 Gly Gly Gly Gly Ser Leu Arg Arg Arg Thr Lys Arg Gln Asp Ser His
 930 935 940
 Asp Ser Val Ala Ser Ala Ala Ser Leu Lys Lys Lys Gln Glu Val Glu
 945 950 955 960
 Gly Lys Leu Ile Glu Thr Glu Lys Ser Gln Thr Gly Gly Val Glu Phe
 965 970 975
 Ala Val Tyr Lys His Tyr Ile Lys Ser Val Gly Ile Phe Leu Ser Val
 980 985 990
 Ala Thr Leu Val Leu Asn Phe Val Phe Gln Ala Phe Gln Ile Gly Ser
 995 1000 1005
 Asn Leu Trp Leu Thr Gln Trp Ala Asn Asp Gln Asn Val Ala Asn Asp
 1010 1015 1020
 Thr Gly Leu Arg Asp Met Tyr Leu Gly Val Tyr Gly Ala Phe Gly Phe
 1025 1030 1035 1040
 Gly Gln Gly Val Leu Ala Tyr Phe Ala Val Val Ile Val Tyr Leu Gly
 1045 1050 1055
 Gly Phe Gln Ala Ala Lys Thr Ile His Asn Glu Leu Leu Ala Val Ile
 1060 1065 1070
 Ile Arg Gly Ser Val Cys Arg Phe Phe Asp Ile Thr Pro Ile Gly Arg
 1075 1080 1085
 Leu Leu Asn Ser Phe Ser Gly Asp Met Asp Val Val Asp Glu Glu Leu
 1090 1095 1100
 Pro Ala Thr Met Asp Ser Phe Met Thr Phe Ile Phe Met Val Leu Ala
 1105 1110 1115 1120
 Thr Ile Val Val Ile Ser Leu Ser Thr Pro Ile Phe Leu Ala Val Ile
 1125 1130 1135
 Val Pro Ile Ala Phe Leu Tyr Tyr Phe Ala Gln Arg Phe Tyr Val Ala
 1140 1145 1150
 Thr Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile
 1155 1160 1165
 Tyr Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala
 1170 1175 1180
 Tyr Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp
 1185 1190 1195 1200
 Lys Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu
 1205 1210 1215

Ala Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser
 1220 1225 1230
 Leu Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu
 1235 1240 1245
 Ser Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val
 1250 1255 1260
 Arg Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile
 1265 1270 1275 1280
 Lys Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln
 1285 1290 1295
 Asp Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe
 1300 1305 1310
 Gln Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg
 1315 1320 1325
 Gly Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly
 1330 1335 1340
 Arg Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile
 1345 1350 1355 1360
 Ile Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala
 1365 1370 1375
 Ser Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln
 1380 1385 1390
 Asp Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe
 1395 1400 1405
 Glu Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His
 1410 1415 1420
 Leu Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile
 1425 1430 1435 1440
 Ala Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys
 1445 1450 1455
 Leu Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu
 1460 1465 1470
 Ala Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr
 1475 1480 1485
 Ile Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg
 1490 1495 1500
 Leu Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly
 1505 1510 1515 1520

Gln Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys
 1525 1530 1535

Ser Ala Phe

<210> 21

<211> 1538

<212> PRT

<213> *Drosophila melanogaster*

<400> 21

Met Ala Asp Asp Thr Ser Ser Pro Met Asp Arg Phe Cys Gly Ser Thr
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Phe Trp Asn Ala Thr Glu Thr Trp Tyr Thr Asn Asp Pro Asp Phe Thr
 20 25 30

Pro Cys Phe Glu Gln Thr Ala Leu Val Trp Thr Pro Cys Ala Phe Tyr
 35 40 45

Trp Ala Phe Val Ile Phe Asp Phe Tyr Tyr Leu Lys Ala Ser Leu Asp
 50 55 60

Arg Asn Ile Pro Trp Asn Lys Leu Asn Val Ser Lys Ala Leu Val Asn
 65 70 75 80

Leu Gly Leu Leu Val Ile Thr Ala Leu Asp Leu Ile Met Ala Leu Val
 85 90 95

Lys Lys Gly Gly Asp Ser Glu Leu Pro Leu Tyr Asp Leu Asp Val Trp
 100 105 110

Gly Pro Ile Ile Lys Phe Ala Thr Phe Leu Leu Leu Phe Ile Phe Ile
 115 120 125

Pro Leu Asn Arg Lys Tyr Gly Val Gln Thr Thr Gly Cys Gln Phe Ile
 130 135 140

Phe Trp Phe Leu Leu Thr Val Leu Ser Ile Pro Arg Cys Arg Thr Glu
 145 150 155 160

Val Arg Leu Asp Ala Glu Arg Gln Lys Ile Leu Asn Ser Gln Gln Pro
 165 170 175

Ser Glu Gln Asp Phe Ser Trp Glu Glu Tyr Gln Phe Val Ser Phe Phe
 180 185 190

Ile Phe Phe Thr Phe Thr Ser Ile Met Leu Ile Leu Asn Cys Phe Ala
 195 200 205

Asp Gly Met Pro Arg Gln Thr Lys Tyr Gln Arg Gly Glu Asn Glu Ile
 210 215 220

Pro Glu Leu Ser Ala Ser Phe Leu Ser Arg Ile Thr Tyr Gln Trp Phe
 225 230 235 240

Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp
				245					250					255	
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile
			260					265					270		
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys
		275					280					285			
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe
	290					295					300				
Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser
305					310					315				320	
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly
				325					330					335	
Ala	Leu	Met	Lys	Leu	Phe	Thr	Asp	Thr	Leu	Thr	Phe	Ala	Gln	Pro	Gln
			340					345					350		
Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro
		355					360					365			
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala
	370					375					380				
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val
385					390					395					400
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala
			405						410					415	
Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile
			420					425					430		
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr
		435					440					445			
Tyr	Leu	Asn	Met	Ile	Trp	Ser	Ala	Pro	Leu	Gln	Ile	Gly	Leu	Ala	Leu
	450					455					460				
Tyr	Phe	Leu	Trp	Gln	Gln	Leu	Gly	Pro	Ser	Val	Leu	Ala	Gly	Leu	Ala
465					470					475					480
Val	Met	Ile	Ile	Leu	Ile	Pro	Val	Asn	Gly	Val	Ile	Ala	Ser	Arg	Ile
				485					490					495	
Lys	Thr	Tyr	Gln	Ile	Arg	Gln	Met	Lys	Tyr	Lys	Asp	Glu	Arg	Val	Lys
			500					505					510		
Leu	Met	Asn	Glu	Val	Leu	Ser	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala
		515					520					525			
Trp	Glu	Pro	Ser	Phe	Glu	Lys	Gln	Val	Leu	Asp	Ile	Arg	Asp	Lys	Glu
	530					535					540				

Ile	Ala	Thr	Leu	Arg	Ser	Thr	Ala	Tyr	Leu	Asn	Ala	Gly	Thr	Ser	Phe	545	550	555	560
Leu	Trp	Ser	Cys	Ala	Pro	Phe	Leu	Val	Ser	Leu	Val	Thr	Phe	Ala	Thr	565	570		575
Tyr	Val	Leu	Thr	Ser	Glu	Ala	Asn	Gln	Leu	Ser	Val	Glu	Lys	Val	Leu	580	585		590
Val	Ser	Ile	Ala	Leu	Phe	Asp	Leu	Met	Lys	Leu	Pro	Leu	Thr	Ile	Leu	595	600		605
Pro	Met	Leu	Ser	Val	Asp	Ile	Ala	Glu	Thr	Gln	Val	Ser	Val	Asn	Arg	610	615		620
Ile	Asn	Lys	Phe	Leu	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Ser	Val	Leu	625	630		635
His	Asp	Ser	Ser	Lys	Pro	His	Pro	Met	Ser	Ile	Glu	Asn	Gly	Glu	Phe	645	650		655
Ser	Trp	Gly	Asp	Glu	Ile	Thr	Leu	Arg	Asn	Ile	Asn	Ile	Glu	Val	Lys	660	665		670
Lys	Gly	Ser	Leu	Val	Ala	Leu	Val	Gly	Thr	Val	Gly	Ser	Gly	Lys	Ser	675	680		685
Ser	Val	Val	Gln	Ala	Phe	Leu	Gly	Glu	Met	Glu	Lys	Leu	Ala	Gly	Val	690	695		700
Val	Asn	Thr	Val	Gly	Lys	Leu	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	705	710		715
Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp	725	730		735
Arg	Lys	Arg	Tyr	Asn	Lys	Val	Ile	Asp	Ala	Cys	Ala	Leu	Arg	Ala	Asp	740	745		750
Ile	Asp	Ile	Leu	Ser	Ala	Gly	Asp	Leu	Thr	Glu	Ile	Gly	Glu	Lys	Gly	755	760		765
Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ser	Leu	Ala	Arg	Ala	770	775		780
Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	785	790		795
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro	805	810		815
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val	820	825		830
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu	835	840		845

Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala	850	855	860
Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu	865	870	875
Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val	885	890	895
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr	900	905	910
Glu	Ser	Leu	Ser	Asp	Ser	Ile	Ser	Val	Thr	Ser	Ala	Asp	Ser	Leu	Met	915	920	925
Gly	Gly	Gly	Gly	Ser	Leu	Arg	Arg	Arg	Thr	Lys	Arg	Gln	Asp	Ser	His	930	935	940
Asp	Ser	Val	Ala	Ser	Ala	Ala	Ser	Leu	Lys	Lys	Lys	Gln	Glu	Val	Glu	945	950	955
Gly	Lys	Leu	Ile	Glu	Thr	Glu	Lys	Ser	Gln	Thr	Gly	Gly	Val	Glu	Phe	965	970	975
Ala	Val	Tyr	Lys	His	Tyr	Ile	Lys	Ser	Val	Gly	Ile	Phe	Leu	Ser	Val	980	985	990
Ala	Thr	Leu	Val	Leu	Asn	Phe	Val	Phe	Gln	Ala	Phe	Gln	Ile	Gly	Ser	995	1000	1005
Asn	Leu	Trp	Leu	Thr	Gln	Trp	Ala	Asn	Asp	Gln	Asn	Val	Ala	Asn	Asp	1010	1015	1020
Thr	Gly	Leu	Arg	Asp	Met	Tyr	Leu	Gly	Val	Tyr	Gly	Ala	Phe	Gly	Phe	1025	1030	1035
Gly	Gln	Gly	Leu	Cys	Asn	Tyr	Gly	Ala	Ala	Ile	Ser	Leu	Phe	Thr	Ala	1045	1050	1055
Thr	Leu	His	Ala	Ser	Ser	Arg	Val	Phe	His	Arg	Leu	Phe	Asn	Asn	Ile	1060	1065	1070
Met	His	Cys	Pro	Ser	Glu	Phe	Phe	Asp	Thr	Thr	Pro	Lys	Gly	Arg	Ile	1075	1080	1085
Leu	Asp	Arg	Cys	Ser	Ser	Asp	Val	Asn	Cys	Leu	Asp	Leu	Val	Met	Pro	1090	1095	1100
Leu	Asn	Ile	Arg	Met	Val	Met	Ser	Thr	Ala	Phe	Gln	Val	Leu	Ala	Thr	1105	1110	1115
Ile	Val	Val	Ile	Ser	Leu	Ser	Thr	Pro	Ile	Phe	Leu	Ala	Val	Ile	Val	1125	1130	1135
Pro	Ile	Ala	Phe	Leu	Tyr	Tyr	Phe	Ala	Gln	Arg	Phe	Tyr	Val	Ala	Thr	1140	1145	1150

Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr
 1155 1160 1165
 Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala Tyr
 1170 1175 1180
 Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp Lys
 1185 1190 1195 1200
 Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu Ala
 1205 1210 1215
 Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser Leu
 1220 1225 1230
 Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu Ser
 1235 1240 1245
 Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val Arg
 1250 1255 1260
 Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile Lys
 1265 1270 1275 1280
 Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln Asp
 1285 1290 1295
 Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe Gln
 1300 1305 1310
 Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg Gly
 1315 1320 1325
 Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly Arg
 1330 1335 1340
 Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile Ile
 1345 1350 1355 1360
 Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala Ser
 1365 1370 1375
 Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln Asp
 1380 1385 1390
 Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe Glu
 1395 1400 1405
 Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His Leu
 1410 1415 1420
 Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile Ala
 1425 1430 1435 1440
 Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu
 1445 1450 1455

Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu Ala
 1460 1465 1470

Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr Ile
 1475 1480 1485

Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg Leu
 1490 1495 1500

Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly Gln
 1505 1510 1515 1520

Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys Ser
 1525 1530 1535

Ala Phe

<210> 22

<211> 1538

<212> PRT

<213> *Drosophila melanogaster*

<400> 22

Met Ala Asp Asp Thr Ser Ser Pro Met Asp Arg Phe Cys Gly Ser Thr
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Phe Trp Asn Ala Thr Glu Thr Trp Tyr Thr Asn Asp Pro Asp Phe Thr
 20 25 30

Pro Cys Phe Glu Gln Thr Ala Leu Val Trp Thr Pro Cys Ala Phe Tyr
 35 40 45

Trp Ala Phe Val Ile Phe Asp Phe Tyr Tyr Leu Lys Ala Ser Leu Asp
 50 55 60

Arg Asn Ile Pro Trp Asn Lys Leu Asn Val Ser Lys Ala Leu Val Asn
 65 70 75 80

Leu Gly Leu Leu Val Ile Thr Ala Leu Asp Leu Ile Met Ala Leu Val
 85 90 95

Lys Lys Gly Gly Asp Ser Glu Leu Pro Leu Tyr Asp Leu Asp Val Trp
 100 105 110

Gly Pro Ile Ile Lys Phe Ala Thr Phe Leu Leu Leu Phe Ile Phe Ile
 115 120 125

Pro Leu Asn Arg Lys Tyr Gly Val Gln Thr Thr Gly Cys Gln Phe Ile
 130 135 140

Phe Trp Phe Leu Leu Thr Val Leu Ser Ile Pro Arg Cys Arg Thr Glu
 145 150 155 160

Val Arg Leu Asp Ala Glu Arg Gln Lys Ile Leu Asn Ser Gln Gln Pro
 165 170 175

Ser	Glu	Gln	Asp	Phe	Ser	Trp	Glu	Glu	Tyr	Gln	Phe	Val	Ser	Phe	Phe
			180					185					190		
Ile	Phe	Phe	Thr	Phe	Thr	Ser	Ile	Met	Leu	Ile	Leu	Asn	Cys	Phe	Ala
		195					200					205			
Asp	Gly	Met	Pro	Arg	Gln	Thr	Lys	Tyr	Gln	Arg	Gly	Glu	Asn	Glu	Ile
	210					215					220				
Pro	Glu	Leu	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Tyr	Gln	Trp	Phe
225					230					235					240
Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp
				245					250					255	
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile
			260					265					270		
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys
		275					280					285			
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe
	290					295					300				
Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser
305					310					315					320
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly
				325					330					335	
Ala	Leu	Met	Lys	Leu	Phe	Thr	Asp	Thr	Leu	Thr	Phe	Ala	Gln	Pro	Gln
			340					345					350		
Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro
		355					360					365			
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala
	370					375					380				
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val
385					390					395					400
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala
				405					410					415	
Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile
			420					425					430		
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr
		435					440					445			
Tyr	Leu	Asn	Met	Ile	Trp	Ser	Ala	Pro	Leu	Gln	Ile	Gly	Leu	Ala	Leu
	450					455					460				
Tyr	Phe	Leu	Trp	Gln	Gln	Leu	Gly	Pro	Ser	Val	Leu	Ala	Gly	Leu	Ala
465					470					475					480

Val	Met	Ile	Ile	Leu	Ile	Pro	Val	Asn	Gly	Val	Ile	Ala	Ser	Arg	Ile	485	490	495
Lys	Thr	Tyr	Gln	Ile	Arg	Gln	Met	Lys	Tyr	Lys	Asp	Glu	Arg	Val	Lys	500	505	510
Leu	Met	Asn	Glu	Val	Leu	Ser	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	515	520	525
Trp	Glu	Pro	Ser	Phe	Glu	Lys	Gln	Val	Leu	Asp	Ile	Arg	Asp	Lys	Glu	530	535	540
Ile	Ala	Thr	Leu	Arg	Ser	Thr	Ala	Tyr	Leu	Asn	Ala	Gly	Thr	Ser	Phe	545	550	555
Leu	Trp	Ser	Cys	Ala	Pro	Phe	Leu	Val	Ser	Leu	Val	Thr	Phe	Ala	Thr	565	570	575
Tyr	Val	Leu	Thr	Ser	Glu	Ala	Asn	Gln	Leu	Ser	Val	Glu	Lys	Val	Leu	580	585	590
Val	Ser	Ile	Ala	Leu	Phe	Asp	Leu	Met	Lys	Leu	Pro	Leu	Thr	Ile	Leu	595	600	605
Pro	Met	Leu	Ser	Val	Asp	Ile	Ala	Glu	Thr	Gln	Val	Ser	Val	Asn	Arg	610	615	620
Ile	Asn	Lys	Phe	Leu	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Ser	Val	Leu	625	630	635
His	Asp	Ser	Ser	Lys	Pro	His	Pro	Met	Ser	Ile	Glu	Asn	Gly	Glu	Phe	645	650	655
Ser	Trp	Gly	Asp	Glu	Ile	Thr	Leu	Arg	Asn	Ile	Asn	Ile	Glu	Val	Lys	660	665	670
Lys	Gly	Ser	Leu	Val	Ala	Leu	Val	Gly	Thr	Val	Gly	Ser	Gly	Lys	Ser	675	680	685
Ser	Val	Val	Gln	Ala	Phe	Leu	Gly	Glu	Met	Glu	Lys	Leu	Ala	Gly	Val	690	695	700
Val	Asn	Thr	Val	Gly	Lys	Leu	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	705	710	715
Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp	725	730	735
Arg	Lys	Arg	Tyr	Asn	Lys	Val	Ile	Asp	Ala	Cys	Ala	Leu	Arg	Ala	Asp	740	745	750
Ile	Asp	Ile	Leu	Ser	Ala	Gly	Asp	Leu	Thr	Glu	Ile	Gly	Glu	Lys	Gly	755	760	765
Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ser	Leu	Ala	Arg	Ala	770	775	780

Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	785	790	795	800
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro	805	810	815	
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val	820	825	830	
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu	835	840	845	
Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala	850	855	860	
Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu	865	870	875	880
Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val	885	890	895	
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr	900	905	910	
Glu	Ser	Leu	Ser	Asp	Ser	Ile	Ser	Val	Thr	Ser	Ala	Asp	Ser	Leu	Met	915	920	925	
Gly	Gly	Gly	Gly	Ser	Leu	Arg	Arg	Arg	Thr	Lys	Arg	Gln	Asp	Ser	His	930	935	940	
Asp	Ser	Val	Ala	Ser	Ala	Ala	Ser	Leu	Lys	Lys	Lys	Gln	Glu	Val	Glu	945	950	955	960
Gly	Lys	Leu	Ile	Glu	Thr	Glu	Lys	Ser	Gln	Thr	Gly	Gly	Val	Glu	Phe	965	970	975	
Ala	Val	Tyr	Lys	His	Tyr	Ile	Lys	Ser	Val	Gly	Ile	Phe	Leu	Ser	Val	980	985	990	
Ala	Thr	Leu	Val	Leu	Asn	Phe	Val	Phe	Gln	Ala	Phe	Gln	Ile	Gly	Ser	995	1000	1005	
Asn	Leu	Trp	Leu	Thr	Gln	Trp	Ala	Asn	Asp	Gln	Asn	Val	Ala	Asn	Asp	1010	1015	1020	
Thr	Gly	Leu	Arg	Asp	Met	Tyr	Leu	Gly	Val	Tyr	Gly	Ala	Phe	Gly	Phe	1025	1030	1035	1040
Gly	Gln	Gly	Phe	Thr	Ser	Phe	Phe	Ser	Asp	Leu	Ala	Pro	Ala	Leu	Gly	1045	1050	1055	
Ser	Leu	His	Ala	Ala	Lys	Val	Leu	His	Ser	Met	Leu	Leu	Glu	Asn	Val	1060	1065	1070	
Leu	Arg	Ala	Pro	Met	Thr	Met	Phe	Asp	Thr	Thr	Pro	Val	Gly	Arg	Ile	1075	1080	1085	

Leu Ser Arg Phe Ser Lys Asp Val Glu Ser Val Asp Gln Lys Met Pro
 1090 1095 1100
 Gln Val Ile Asn Asp Cys Ile Trp Cys Ala Phe Glu Val Leu Ala Thr
 1105 1110 1115 1120
 Ile Val Val Ile Ser Leu Ser Thr Pro Ile Phe Leu Ala Val Ile Val
 1125 1130 1135
 Pro Ile Ala Phe Leu Tyr Tyr Phe Ala Gln Arg Phe Tyr Val Ala Thr
 1140 1145 1150
 Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr
 1155 1160 1165
 Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala Tyr
 1170 1175 1180
 Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp Lys
 1185 1190 1195 1200
 Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu Ala
 1205 1210 1215
 Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser Leu
 1220 1225 1230
 Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu Ser
 1235 1240 1245
 Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val Arg
 1250 1255 1260
 Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile Lys
 1265 1270 1275 1280
 Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln Asp
 1285 1290 1295
 Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe Gln
 1300 1305 1310
 Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg Gly
 1315 1320 1325
 Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly Arg
 1330 1335 1340
 Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile Ile
 1345 1350 1355 1360
 Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala Ser
 1365 1370 1375
 Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln Asp
 1380 1385 1390

Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe Glu
 1395 1400 1405

Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His Leu
 1410 1415 1420

Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile Ala
 1425 1430 1435 1440

Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu
 1445 1450 1455

Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu Ala
 1460 1465 1470

Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr Ile
 1475 1480 1485

Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg Leu
 1490 1495 1500

Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly Gln
 1505 1510 1515 1520

Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys Ser
 1525 1530 1535

Ala Phe

<210> 23

<211> 1538

<212> PRT

<213> *Drosophila melanogaster*

<400> 23

Met Ala Asp Asp Thr Ser Ser Pro Met Asp Arg Phe Cys Gly Ser Thr
 1 5 10 15

Phe Trp Asn Ala Thr Glu Thr Trp Tyr Thr Asn Asp Pro Asp Phe Thr
 20 25 30

Pro Cys Phe Glu Gln Thr Ala Leu Val Trp Thr Pro Cys Ala Phe Tyr
 35 40 45

Trp Ala Phe Val Ile Phe Asp Phe Tyr Tyr Leu Lys Ala Ser Leu Asp
 50 55 60

Arg Asn Ile Pro Trp Asn Lys Leu Asn Val Ser Lys Ala Leu Val Asn
 65 70 75 80

Leu Gly Leu Leu Val Ile Thr Ala Leu Asp Leu Ile Met Ala Leu Val
 85 90 95

Lys Lys Gly Gly Asp Ser Glu Leu Pro Leu Tyr Asp Leu Asp Val Trp
 100 105 110

Gly	Pro	Ile	Ile	Lys	Phe	Ala	Thr	Phe	Leu	Leu	Leu	Phe	Ile	Phe	Ile	115	120	125
Pro	Leu	Asn	Arg	Lys	Tyr	Gly	Val	Gln	Thr	Thr	Gly	Cys	Gln	Phe	Ile	130	135	140
Phe	Trp	Phe	Leu	Leu	Thr	Val	Leu	Ser	Ile	Pro	Arg	Cys	Arg	Thr	Glu	145	150	155
Val	Arg	Leu	Asp	Ala	Glu	Arg	Gln	Lys	Ile	Leu	Asn	Ser	Gln	Gln	Pro	165	170	175
Ser	Glu	Gln	Asp	Phe	Ser	Trp	Glu	Glu	Tyr	Gln	Phe	Val	Ser	Phe	Phe	180	185	190
Ile	Phe	Phe	Thr	Phe	Thr	Ser	Ile	Met	Leu	Ile	Leu	Asn	Cys	Phe	Ala	195	200	205
Asp	Gly	Met	Pro	Arg	Gln	Thr	Lys	Tyr	Gln	Arg	Gly	Glu	Asn	Glu	Ile	210	215	220
Pro	Glu	Leu	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Tyr	Gln	Trp	Phe	225	230	235
Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp	245	250	255
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile	260	265	270
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys	275	280	285
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe	290	295	300
Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser	305	310	315
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly	325	330	335
Ala	Leu	Met	Lys	Leu	Phe	Thr	Asp	Thr	Leu	Thr	Phe	Ala	Gln	Pro	Gln	340	345	350
Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro	355	360	365
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala	370	375	380
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val	385	390	395
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala	405	410	415

Leu Arg Ile Ser Asn Ser Thr Lys Lys Glu Ser Thr Val Gly Glu Ile
 420 425 430
 Val Asn Leu Met Ala Val Asp Ala Gln Arg Phe Met Glu Leu Thr Thr
 435 440 445
 Tyr Leu Asn Met Ile Trp Ser Ala Pro Leu Gln Ile Gly Leu Ala Leu
 450 455 460
 Tyr Phe Leu Trp Gln Gln Leu Gly Pro Ser Val Leu Ala Gly Leu Ala
 465 470 475 480
 Val Met Ile Ile Leu Ile Pro Val Asn Gly Val Ile Ala Ser Arg Ile
 485 490 495
 Lys Thr Tyr Gln Ile Arg Gln Met Lys Tyr Lys Asp Glu Arg Val Lys
 500 505 510
 Leu Met Asn Glu Val Leu Ser Gly Ile Lys Val Leu Lys Leu Tyr Ala
 515 520 525
 Trp Glu Pro Ser Phe Glu Lys Gln Val Leu Asp Ile Arg Asp Lys Glu
 530 535 540
 Ile Ala Thr Leu Arg Ser Thr Ala Tyr Leu Asn Ala Gly Thr Ser Phe
 545 550 555 560
 Leu Trp Ser Cys Ala Pro Phe Leu Val Ser Leu Val Thr Phe Ala Thr
 565 570 575
 Tyr Val Leu Ile Asp Glu Asn Asn Val Leu Asp Ala Thr Lys Thr Phe
 580 585 590
 Val Ser Leu Ser Leu Phe Asn Ile Leu Arg Phe Pro Leu Thr Met Leu
 595 600 605
 Pro Met Leu Ile Thr Asn Leu Val Gln Thr Gln Val Ser Val Asn Arg
 610 615 620
 Ile Asn Lys Phe Leu Asn Ser Glu Glu Leu Asp Pro Asn Ser Val Leu
 625 630 635 640
 His Asp Ser Ser Lys Pro His Pro Met Ser Ile Glu Asn Gly Glu Phe
 645 650 655
 Ser Trp Gly Asp Glu Ile Thr Leu Arg Asn Ile Asn Ile Glu Val Lys
 660 665 670
 Lys Gly Ser Leu Val Ala Leu Val Gly Thr Val Gly Ser Gly Lys Ser
 675 680 685
 Ser Val Val Gln Ala Phe Leu Gly Glu Met Glu Lys Leu Ala Gly Val
 690 695 700
 Val Asn Thr Val Gly Lys Leu Ala Tyr Val Pro Gln Gln Ala Trp Ile
 705 710 715 720

Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp	725	730	735
Arg	Lys	Arg	Tyr	Asn	Lys	Val	Ile	Asp	Ala	Cys	Ala	Leu	Arg	Ala	Asp	740	745	750
Ile	Asp	Ile	Leu	Ser	Ala	Gly	Asp	Leu	Thr	Glu	Ile	Gly	Glu	Lys	Gly	755	760	765
Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ser	Leu	Ala	Arg	Ala	770	775	780
Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	785	790	800
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro	805	810	815
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val	820	825	830
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu	835	840	845
Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala	850	855	860
Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu	865	870	875
Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val	885	890	895
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr	900	905	910
Glu	Ser	Leu	Ser	Asp	Ser	Ile	Ser	Val	Thr	Ser	Ala	Asp	Ser	Leu	Met	915	920	925
Gly	Gly	Gly	Gly	Ser	Leu	Arg	Arg	Arg	Thr	Lys	Arg	Gln	Asp	Ser	His	930	935	940
Asp	Ser	Val	Ala	Ser	Ala	Ala	Ser	Leu	Lys	Lys	Lys	Gln	Glu	Val	Glu	945	950	955
Gly	Lys	Leu	Ile	Glu	Thr	Glu	Lys	Ser	Gln	Thr	Gly	Gly	Val	Glu	Phe	965	970	975
Ala	Val	Tyr	Lys	His	Tyr	Ile	Lys	Ser	Val	Gly	Ile	Phe	Leu	Ser	Val	980	985	990
Ala	Thr	Leu	Val	Leu	Asn	Phe	Val	Phe	Gln	Ala	Phe	Gln	Ile	Gly	Ser	995	1000	1005
Asn	Leu	Trp	Leu	Thr	Gln	Trp	Ala	Asn	Asp	Gln	Asn	Val	Ala	Asn	Asp	1010	1015	1020

Thr Gly Leu Arg Asp Met Tyr Leu Gly Val Tyr Gly Ala Phe Gly Phe
 1025 1030 1035 1040
 Gly Gln Val Ala Thr Asn Phe Phe Ser Ser Leu Ala Ile Ser Leu Gly
 1045 1050 1055
 Cys Leu Lys Cys Ser Gln Leu Leu His Gln Thr Leu Leu Tyr Tyr Asn
 1060 1065 1070
 Leu Arg Trp Pro Met Glu Leu Phe Asp Thr Thr Pro Leu Gly Arg Ile
 1075 1080 1085
 Val Asn Arg Phe Ser Lys Asp Ile Asp Thr Ile Asp Asn Val Leu Pro
 1090 1095 1100
 Phe Asn Ile Arg Val Val Ile Gly Gln Ala Tyr Met Val Leu Ala Thr
 1105 1110 1115 1120
 Ile Val Val Ile Ser Leu Ser Thr Pro Ile Phe Leu Ala Val Ile Val
 1125 1130 1135
 Pro Ile Ala Phe Leu Tyr Tyr Phe Ala Gln Arg Phe Tyr Val Ala Thr
 1140 1145 1150
 Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr
 1155 1160 1165
 Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala Tyr
 1170 1175 1180
 Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp Lys
 1185 1190 1195 1200
 Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu Ala
 1205 1210 1215
 Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser Leu
 1220 1225 1230
 Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu Ser
 1235 1240 1245
 Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val Arg
 1250 1255 1260
 Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile Lys
 1265 1270 1275 1280
 Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln Asp
 1285 1290 1295
 Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe Gln
 1300 1305 1310
 Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg Gly
 1315 1320 1325

Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly Arg
 1330 1335 1340

Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile Ile
 1345 1350 1355 1360

Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala Ser
 1365 1370 1375

Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln Asp
 1380 1385 1390

Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe Glu
 1395 1400 1405

Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His Leu
 1410 1415 1420

Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile Ala
 1425 1430 1435 1440

Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu
 1445 1450 1455

Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu Ala
 1460 1465 1470

Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr Ile
 1475 1480 1485

Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg Leu
 1490 1495 1500

Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly Gln
 1505 1510 1515 1520

Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys Ser
 1525 1530 1535

Ala Phe

<210> 24

<211> 1538

<212> PRT

<213> *Drosophila melanogaster*

<400> 24

Met Ala Asp Asp Thr Ser Ser Pro Met Asp Arg Phe Cys Gly Ser Thr
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Phe Trp Asn Ala Thr Glu Thr Trp Tyr Thr Asn Asp Pro Asp Phe Thr
 20 25 30

Pro Cys Phe Glu Gln Thr Ala Leu Val Trp Thr Pro Cys Ala Phe Tyr
 35 40 45

Trp	Ala	Phe	Val	Ile	Phe	Asp	Phe	Tyr	Tyr	Leu	Lys	Ala	Ser	Leu	Asp	50	55	60
Arg	Asn	Ile	Pro	Trp	Asn	Lys	Leu	Asn	Val	Ser	Lys	Ala	Leu	Val	Asn	65	70	75
Leu	Gly	Leu	Leu	Val	Ile	Thr	Ala	Leu	Asp	Leu	Ile	Met	Ala	Leu	Val	85	90	95
Lys	Lys	Gly	Gly	Asp	Ser	Glu	Leu	Pro	Leu	Tyr	Asp	Leu	Asp	Val	Trp	100	105	110
Gly	Pro	Ile	Ile	Lys	Phe	Ala	Thr	Phe	Leu	Leu	Leu	Phe	Ile	Phe	Ile	115	120	125
Pro	Leu	Asn	Arg	Lys	Tyr	Gly	Val	Gln	Thr	Thr	Gly	Cys	Gln	Phe	Ile	130	135	140
Phe	Trp	Phe	Leu	Leu	Thr	Val	Leu	Ser	Ile	Pro	Arg	Cys	Arg	Thr	Glu	145	150	155
Val	Arg	Leu	Asp	Ala	Glu	Arg	Gln	Lys	Ile	Leu	Asn	Ser	Gln	Gln	Pro	165	170	175
Ser	Glu	Gln	Asp	Phe	Ser	Trp	Glu	Glu	Tyr	Gln	Phe	Val	Ser	Phe	Phe	180	185	190
Ile	Phe	Phe	Thr	Phe	Thr	Ser	Ile	Met	Leu	Ile	Leu	Asn	Cys	Phe	Ala	195	200	205
Asp	Gly	Met	Pro	Arg	Gln	Thr	Lys	Tyr	Gln	Arg	Gly	Glu	Asn	Glu	Ile	210	215	220
Pro	Glu	Leu	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Tyr	Gln	Trp	Phe	225	230	235
Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp	245	250	255
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile	260	265	270
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys	275	280	285
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe	290	295	300
Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser	305	310	315
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly	325	330	335
Ala	Leu	Met	Lys	Leu	Phe	Thr	Asp	Thr	Leu	Thr	Phe	Ala	Gln	Pro	Gln	340	345	350

Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro
		355					360					365			
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala
	370					375					380				
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val
385					390					395					400
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala
			405						410					415	
Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile
			420					425					430		
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr
		435					440					445			
Tyr	Leu	Asn	Met	Ile	Trp	Ser	Ala	Pro	Leu	Gln	Ile	Gly	Leu	Ala	Leu
	450					455					460				
Tyr	Phe	Leu	Trp	Gln	Gln	Leu	Gly	Pro	Ser	Val	Leu	Ala	Gly	Leu	Ala
465					470					475					480
Val	Met	Ile	Ile	Leu	Ile	Pro	Val	Asn	Gly	Val	Ile	Ala	Ser	Arg	Ile
				485					490					495	
Lys	Thr	Tyr	Gln	Ile	Arg	Gln	Met	Lys	Tyr	Lys	Asp	Glu	Arg	Val	Lys
			500					505					510		
Leu	Met	Asn	Glu	Val	Leu	Ser	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala
		515					520					525			
Trp	Glu	Pro	Ser	Phe	Glu	Lys	Gln	Val	Leu	Asp	Ile	Arg	Asp	Lys	Glu
	530					535					540				
Ile	Ala	Thr	Leu	Arg	Ser	Thr	Ala	Tyr	Leu	Asn	Ala	Gly	Thr	Ser	Phe
545					550					555					560
Leu	Trp	Ser	Cys	Ala	Pro	Phe	Leu	Val	Ser	Leu	Val	Thr	Phe	Ala	Thr
			565						570					575	
Tyr	Val	Leu	Ile	Asp	Glu	Asn	Asn	Val	Leu	Asp	Ala	Thr	Lys	Thr	Phe
			580					585					590		
Val	Ser	Leu	Ser	Leu	Phe	Asn	Ile	Leu	Arg	Phe	Pro	Leu	Thr	Met	Leu
		595					600					605			
Pro	Met	Leu	Ile	Thr	Asn	Leu	Val	Gln	Thr	Gln	Val	Ser	Val	Asn	Arg
	610					615					620				
Ile	Asn	Lys	Phe	Leu	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Ser	Val	Leu
625					630					635					640
His	Asp	Ser	Ser	Lys	Pro	His	Pro	Met	Ser	Ile	Glu	Asn	Gly	Glu	Phe
				645					650					655	

Ser Trp Gly Asp Glu Ile Thr Leu Arg Asn Ile Asn Ile Glu Val Lys
 660 665 670
 Lys Gly Ser Leu Val Ala Leu Val Gly Thr Val Gly Ser Gly Lys Ser
 675 680 685
 Ser Val Val Gln Ala Phe Leu Gly Glu Met Glu Lys Leu Ala Gly Val
 690 695 700
 Val Asn Thr Val Gly Lys Leu Ala Tyr Val Pro Gln Gln Ala Trp Ile
 705 710 715 720
 Gln Asn Ala Thr Val Arg Asp Asn Ile Leu Phe Gly Gln Thr Tyr Asp
 725 730 735
 Arg Lys Arg Tyr Asn Lys Val Ile Asp Ala Cys Ala Leu Arg Ala Asp
 740 745 750
 Ile Asp Ile Leu Ser Ala Gly Asp Leu Thr Glu Ile Gly Glu Lys Gly
 755 760 765
 Ile Asn Leu Ser Gly Gly Gln Lys Gln Arg Ile Ser Leu Ala Arg Ala
 770 775 780
 Val Tyr Ser Asp Ala Asp Leu Tyr Leu Leu Asp Asp Pro Leu Ser Ala
 785 790 795 800
 Val Asp Ala His Val Gly Lys His Ile Phe Glu Glu Val Ile Gly Pro
 805 810 815
 Lys Gly Ile Leu Ala Arg Lys Ser Arg Val Leu Val Thr His Gly Val
 820 825 830
 Thr Phe Leu Pro Gln Val Asp Ser Ile Tyr Val Ile Lys Met Gly Glu
 835 840 845
 Ile Ser Glu Ser Gly Thr Phe Asp Gln Leu Val Lys Asn Lys Gly Ala
 850 855 860
 Phe Ala Asp Phe Ile Ile Gln His Leu Gln Glu Gly Asn Glu Glu Glu
 865 870 875 880
 Glu Glu Leu Asn Gln Ile Lys Arg Gln Ile Ser Ser Thr Ala Asp Val
 885 890 895
 Pro Glu Leu Leu Gly Thr Val Glu Lys Ala Ile Lys Leu Ala Arg Thr
 900 905 910
 Glu Ser Leu Ser Asp Ser Ile Ser Val Thr Ser Ala Asp Ser Leu Met
 915 920 925
 Gly Gly Gly Gly Ser Leu Arg Arg Arg Thr Lys Arg Gln Asp Ser His
 930 935 940
 Asp Ser Val Ala Ser Ala Ala Ser Leu Lys Lys Lys Gln Glu Val Glu
 945 950 955 960

Gly Lys Leu Ile Glu Thr Glu Lys Ser Gln Thr Gly Gly Val Glu Phe
 965 970 975
 Ala Val Tyr Lys His Tyr Ile Lys Ser Val Gly Ile Phe Leu Ser Val
 980 985 990
 Ala Thr Leu Val Leu Asn Phe Val Phe Gln Ala Phe Gln Ile Gly Ser
 995 1000 1005
 Asn Leu Trp Leu Thr Gln Trp Ala Asn Asp Gln Asn Val Ala Asn Asp
 1010 1015 1020
 Thr Gly Leu Arg Asp Met Tyr Leu Gly Val Tyr Gly Ala Phe Gly Phe
 1025 1030 1035 1040
 Gly Gln Val Val Thr Gly Tyr Leu Ser Thr Leu Ile Leu Ser Leu Gly
 1045 1050 1055
 Cys Val Tyr Ser Ala Arg Tyr Met His Asn Val Leu Leu His Gly Thr
 1060 1065 1070
 Leu Arg Trp Pro Met Glu Met Phe Asp Ile Thr Pro Leu Gly Arg Ile
 1075 1080 1085
 Val Asn Arg Phe Ser Lys Asp Val Asp Thr Ile Asp Asn Thr Leu Pro
 1090 1095 1100
 Leu Asn Leu Arg Val Val Ile Leu Gln Leu Phe Ala Val Leu Ala Thr
 1105 1110 1115 1120
 Ile Val Val Ile Ser Leu Ser Thr Pro Ile Phe Leu Ala Val Ile Val
 1125 1130 1135
 Pro Ile Ala Phe Leu Tyr Tyr Phe Ala Gln Arg Phe Tyr Val Ala Thr
 1140 1145 1150
 Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr
 1155 1160 1165
 Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala Tyr
 1170 1175 1180
 Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp Lys
 1185 1190 1195 1200
 Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu Ala
 1205 1210 1215
 Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser Leu
 1220 1225 1230
 Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu Ser
 1235 1240 1245
 Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val Arg
 1250 1255 1260

Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile Lys
 1265 1270 1275 1280
 Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln Asp
 1285 1290 1295
 Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe Gln
 1300 1305 1310
 Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg Gly
 1315 1320 1325
 Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly Arg
 1330 1335 1340
 Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile Ile
 1345 1350 1355 1360
 Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala Ser
 1365 1370 1375
 Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln Asp
 1380 1385 1390
 Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe Glu
 1395 1400 1405
 Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His Leu
 1410 1415 1420
 Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile Ala
 1425 1430 1435 1440
 Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu
 1445 1450 1455
 Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu Ala
 1460 1465 1470
 Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr Ile
 1475 1480 1485
 Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg Leu
 1490 1495 1500
 Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly Gln
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 Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys Ser
 1525 1530 1535

Ala Phe

<210> 25

<211> 1538

<212> PRT

<213> *Drosophila melanogaster*

<400> 25

Met	Ala	Asp	Asp	Thr	Ser	Ser	Pro	Met	Asp	Arg	Phe	Cys	Gly	Ser	Thr
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Phe	Trp	Asn	Ala	Thr	Glu	Thr	Trp	Tyr	Thr	Asn	Asp	Pro	Asp	Phe	Thr
			20					25					30		
Pro	Cys	Phe	Glu	Gln	Thr	Ala	Leu	Val	Trp	Thr	Pro	Cys	Ala	Phe	Tyr
		35					40					45			
Trp	Ala	Phe	Val	Ile	Phe	Asp	Phe	Tyr	Tyr	Leu	Lys	Ala	Ser	Leu	Asp
	50					55					60				
Arg	Asn	Ile	Pro	Trp	Asn	Lys	Leu	Asn	Val	Ser	Lys	Ala	Leu	Val	Asn
	65				70					75					80
Leu	Gly	Leu	Leu	Val	Ile	Thr	Ala	Leu	Asp	Leu	Ile	Met	Ala	Leu	Val
				85					90						95
Lys	Lys	Gly	Gly	Asp	Ser	Glu	Leu	Pro	Leu	Tyr	Asp	Leu	Asp	Val	Trp
		100						105					110		
Gly	Pro	Ile	Ile	Lys	Phe	Ala	Thr	Phe	Leu	Leu	Leu	Phe	Ile	Phe	Ile
		115					120						125		
Pro	Leu	Asn	Arg	Lys	Tyr	Gly	Val	Gln	Thr	Thr	Gly	Cys	Gln	Phe	Ile
	130					135					140				
Phe	Trp	Phe	Leu	Leu	Thr	Val	Leu	Ser	Ile	Pro	Arg	Cys	Arg	Thr	Glu
145					150					155					160
Val	Arg	Leu	Asp	Ala	Glu	Arg	Gln	Lys	Ile	Leu	Asn	Ser	Gln	Gln	Pro
				165					170					175	
Ser	Glu	Gln	Asp	Phe	Ser	Trp	Glu	Glu	Tyr	Gln	Phe	Val	Ser	Phe	Phe
			180					185					190		
Ile	Phe	Phe	Thr	Phe	Thr	Ser	Ile	Met	Leu	Ile	Leu	Asn	Cys	Phe	Ala
		195					200					205			
Asp	Gly	Met	Pro	Arg	Gln	Thr	Lys	Tyr	Gln	Arg	Gly	Glu	Asn	Glu	Ile
	210					215					220				
Pro	Glu	Leu	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Tyr	Gln	Trp	Phe
225					230					235					240
Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp
			245						250					255	
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile
			260					265					270		
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys
		275					280					285			
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe
	290					295					300				

Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser	305	310	315	320
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly	325	330	335	
Ala	Leu	Met	Lys	Leu	Phe	Thr	Asp	Thr	Leu	Thr	Phe	Ala	Gln	Pro	Gln	340	345	350	
Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro	355	360	365	
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala	370	375	380	
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val	385	390	395	400
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala	405	410	415	
Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile	420	425	430	
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr	435	440	445	
Tyr	Leu	Asn	Met	Ile	Trp	Ser	Ala	Pro	Leu	Gln	Ile	Gly	Leu	Ala	Leu	450	455	460	
Tyr	Phe	Leu	Trp	Gln	Gln	Gly	Pro	Ser	Val	Leu	Ala	Gly	Leu	Ala		465	470	475	480
Val	Met	Ile	Ile	Leu	Ile	Pro	Val	Asn	Gly	Val	Ile	Ala	Ser	Arg	Ile	485	490	495	
Lys	Thr	Tyr	Gln	Ile	Arg	Gln	Met	Lys	Tyr	Lys	Asp	Glu	Arg	Val	Lys	500	505	510	
Leu	Met	Asn	Glu	Val	Leu	Ser	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	515	520	525	
Trp	Glu	Pro	Ser	Phe	Glu	Lys	Gln	Val	Leu	Asp	Ile	Arg	Asp	Lys	Glu	530	535	540	
Ile	Ala	Thr	Leu	Arg	Ser	Thr	Ala	Tyr	Leu	Asn	Ala	Gly	Thr	Ser	Phe	545	550	555	560
Leu	Trp	Ser	Cys	Ala	Pro	Phe	Leu	Val	Ser	Leu	Val	Thr	Phe	Ala	Thr	565	570	575	
Tyr	Val	Leu	Ile	Asp	Glu	Asn	Asn	Val	Leu	Asp	Ala	Thr	Lys	Thr	Phe	580	585	590	
Val	Ser	Leu	Ser	Leu	Phe	Asn	Ile	Leu	Arg	Phe	Pro	Leu	Thr	Met	Leu	595	600	605	

Pro	Met	Leu	Ile	Thr	Asn	Leu	Val	Gln	Thr	Gln	Val	Ser	Val	Asn	Arg	610	615	620
Ile	Asn	Lys	Phe	Leu	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Ser	Val	Leu	625	630	635
His	Asp	Ser	Ser	Lys	Pro	His	Pro	Met	Ser	Ile	Glu	Asn	Gly	Glu	Phe	645	650	655
Ser	Trp	Gly	Asp	Glu	Ile	Thr	Leu	Arg	Asn	Ile	Asn	Ile	Glu	Val	Lys	660	665	670
Lys	Gly	Ser	Leu	Val	Ala	Leu	Val	Gly	Thr	Val	Gly	Ser	Gly	Lys	Ser	675	680	685
Ser	Val	Val	Gln	Ala	Phe	Leu	Gly	Glu	Met	Glu	Lys	Leu	Ala	Gly	Val	690	695	700
Val	Asn	Thr	Val	Gly	Lys	Leu	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	705	710	715
Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp	725	730	735
Arg	Lys	Arg	Tyr	Asn	Lys	Val	Ile	Asp	Ala	Cys	Ala	Leu	Arg	Ala	Asp	740	745	750
Ile	Asp	Ile	Leu	Ser	Ala	Gly	Asp	Leu	Thr	Glu	Ile	Gly	Glu	Lys	Gly	755	760	765
Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ser	Leu	Ala	Arg	Ala	770	775	780
Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	785	790	795
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro	805	810	815
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val	820	825	830
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu	835	840	845
Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala	850	855	860
Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu	865	870	875
Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val	885	890	895
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr	900	905	910

Glu Ser Leu Ser Asp Ser Ile Ser Val Thr Ser Ala Asp Ser Leu Met
 915 920 925
 Gly Gly Gly Gly Ser Leu Arg Arg Arg Thr Lys Arg Gln Asp Ser His
 930 935 940
 Asp Ser Val Ala Ser Ala Ala Ser Leu Lys Lys Lys Gln Glu Val Glu
 945 950 955 960
 Gly Lys Leu Ile Glu Thr Glu Lys Ser Gln Thr Gly Gly Val Glu Phe
 965 970 975
 Ala Val Tyr Lys His Tyr Ile Lys Ser Val Gly Ile Phe Leu Ser Val
 980 985 990
 Ala Thr Leu Val Leu Asn Phe Val Phe Gln Ala Phe Gln Ile Gly Ser
 995 1000 1005
 Asn Leu Trp Leu Thr Gln Trp Ala Asn Asp Gln Asn Val Ala Asn Asp
 1010 1015 1020
 Thr Gly Leu Arg Asp Met Tyr Leu Gly Val Tyr Gly Ala Phe Gly Phe
 1025 1030 1035 1040
 Gly Gln Val Thr Ser Tyr Phe Phe Cys Ser Leu Thr Leu Ala Leu Gly
 1045 1050 1055
 Cys Ile Phe Cys Ser Lys Val Leu His Glu Thr Leu Leu Ser Tyr Val
 1060 1065 1070
 Phe Arg Trp Pro Met Glu Leu Phe Asp Thr Thr Pro Leu Gly Arg Val
 1075 1080 1085
 Val Asn Arg Phe Ser Lys Asp Val Asp Thr Ile Asp Asn Val Leu Pro
 1090 1095 1100
 Met Leu Trp Arg Met Val Ile Ser Gln Ala Phe Ala Val Leu Ala Thr
 1105 1110 1115 1120
 Ile Val Val Ile Ser Leu Ser Thr Pro Ile Phe Leu Ala Val Ile Val
 1125 1130 1135
 Pro Ile Ala Phe Leu Tyr Tyr Phe Ala Gln Arg Phe Tyr Val Ala Thr
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 Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr
 1155 1160 1165
 Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala Tyr
 1170 1175 1180
 Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp Lys
 1185 1190 1195 1200
 Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu Ala
 1205 1210 1215

Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser Leu
 1220 1225 1230
 Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu Ser
 1235 1240 1245
 Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val Arg
 1250 1255 1260
 Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile Lys
 1265 1270 1275 1280
 Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln Asp
 1285 1290 1295
 Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe Gln
 1300 1305 1310
 Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg Gly
 1315 1320 1325
 Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly Arg
 1330 1335 1340
 Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile Ile
 1345 1350 1355 1360
 Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala Ser
 1365 1370 1375
 Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln Asp
 1380 1385 1390
 Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe Glu
 1395 1400 1405
 Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His Leu
 1410 1415 1420
 Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile Ala
 1425 1430 1435 1440
 Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu
 1445 1450 1455
 Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu Ala
 1460 1465 1470
 Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr Ile
 1475 1480 1485
 Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg Leu
 1490 1495 1500
 Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly Gln
 1505 1510 1515 1520

Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys Ser
1525 1530 1535

Ala Phe

<210> 26

<211> 1539

<212> PRT

<213> Drosophila melanogaster

<400> 26

Met Ala Asp Asp Thr Ser Ser Pro Met Asp Arg Phe Cys Gly Ser Thr
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Phe Trp Asn Ala Thr Glu Thr Trp Tyr Thr Asn Asp Pro Asp Phe Thr
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Pro Cys Phe Glu Gln Thr Ala Leu Val Trp Thr Pro Cys Ala Phe Tyr
35 40 45

Trp Ala Phe Val Ile Phe Asp Phe Tyr Tyr Leu Lys Ala Ser Leu Asp
50 55 60

Arg Asn Ile Pro Trp Asn Lys Leu Asn Val Ser Lys Ala Leu Val Asn
65 70 75 80

Leu Gly Leu Leu Val Ile Thr Ala Leu Asp Leu Ile Met Ala Leu Val
85 90 95

Lys Lys Gly Gly Asp Ser Glu Leu Pro Leu Tyr Asp Leu Asp Val Trp
100 105 110

Gly Pro Ile Ile Lys Phe Ala Thr Phe Leu Leu Leu Phe Ile Phe Ile
115 120 125

Pro Leu Asn Arg Lys Tyr Gly Val Gln Thr Thr Gly Cys Gln Phe Ile
130 135 140

Phe Trp Phe Leu Leu Thr Val Leu Ser Ile Pro Arg Cys Arg Thr Glu
145 150 155 160

Val Arg Leu Asp Ala Glu Arg Gln Lys Ile Leu Asn Ser Gln Gln Pro
165 170 175

Ser Glu Gln Asp Phe Ser Trp Glu Glu Tyr Gln Phe Val Ser Phe Phe
180 185 190

Ile Phe Phe Thr Phe Thr Ser Ile Met Leu Ile Leu Asn Cys Phe Ala
195 200 205

Asp Gly Met Pro Arg Gln Thr Lys Tyr Gln Arg Gly Glu Asn Glu Ile
210 215 220

Pro Glu Leu Ser Ala Ser Phe Leu Ser Arg Ile Thr Tyr Gln Trp Phe
225 230 235 240

Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp	245	250	255
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile	260	265	270
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys	275	280	285
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe	290	295	300
Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser	305	310	315
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly	325	330	335
Ala	Leu	Met	Lys	Leu	Phe	Thr	Asp	Thr	Leu	Thr	Phe	Ala	Gln	Pro	Gln	340	345	350
Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro	355	360	365
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala	370	375	380
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val	385	390	395
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala	405	410	415
Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile	420	425	430
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr	435	440	445
Tyr	Leu	Asn	Met	Ile	Trp	Ser	Ala	Pro	Leu	Gln	Ile	Gly	Leu	Ala	Leu	450	455	460
Tyr	Phe	Leu	Trp	Gln	Gln	Leu	Gly	Pro	Ser	Val	Leu	Ala	Gly	Leu	Ala	465	470	475
Val	Met	Ile	Ile	Leu	Ile	Pro	Val	Asn	Gly	Val	Ile	Ala	Ser	Arg	Ile	485	490	495
Lys	Thr	Tyr	Gln	Ile	Arg	Gln	Met	Lys	Tyr	Lys	Asp	Glu	Arg	Val	Lys	500	505	510
Leu	Met	Asn	Glu	Val	Leu	Ser	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	515	520	525
Trp	Glu	Pro	Ser	Phe	Glu	Lys	Gln	Val	Leu	Asp	Ile	Arg	Asp	Lys	Glu	530	535	540

Ile	Ala	Thr	Leu	Arg	Ser	Thr	Ala	Tyr	Leu	Asn	Ala	Gly	Thr	Ser	Phe	545	550	555	560
Leu	Trp	Ser	Cys	Ala	Pro	Phe	Leu	Val	Ser	Leu	Val	Thr	Phe	Ala	Thr	565	570		575
Tyr	Val	Leu	Ile	Asp	Glu	Asn	Asn	Val	Leu	Asp	Ala	Thr	Lys	Thr	Phe	580	585		590
Val	Ser	Leu	Ser	Leu	Phe	Asn	Ile	Leu	Arg	Phe	Pro	Leu	Thr	Met	Leu	595	600		605
Pro	Met	Leu	Ile	Thr	Asn	Leu	Val	Gln	Thr	Gln	Val	Ser	Val	Asn	Arg	610	615		620
Ile	Asn	Lys	Phe	Leu	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Ser	Val	Leu	625	630		635
His	Asp	Ser	Ser	Lys	Pro	His	Pro	Met	Ser	Ile	Glu	Asn	Gly	Glu	Phe	645	650		655
Ser	Trp	Gly	Asp	Glu	Ile	Thr	Leu	Arg	Asn	Ile	Asn	Ile	Glu	Val	Lys	660	665		670
Lys	Gly	Ser	Leu	Val	Ala	Leu	Val	Gly	Thr	Val	Gly	Ser	Gly	Lys	Ser	675	680		685
Ser	Val	Val	Gln	Ala	Phe	Leu	Gly	Glu	Met	Glu	Lys	Leu	Ala	Gly	Val	690	695		700
Val	Asn	Thr	Val	Gly	Lys	Leu	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	705	710		715
Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp	725	730		735
Arg	Lys	Arg	Tyr	Asn	Lys	Val	Ile	Asp	Ala	Cys	Ala	Leu	Arg	Ala	Asp	740	745		750
Ile	Asp	Ile	Leu	Ser	Ala	Gly	Asp	Leu	Thr	Glu	Ile	Gly	Glu	Lys	Gly	755	760		765
Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ser	Leu	Ala	Arg	Ala	770	775		780
Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	785	790		795
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro	805	810		815
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val	820	825		830
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu	835	840		845

Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala	850	855	860
Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu	865	870	875
Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val	885	890	895
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr	900	905	910
Glu	Ser	Leu	Ser	Asp	Ser	Ile	Ser	Val	Thr	Ser	Ala	Asp	Ser	Leu	Met	915	920	925
Gly	Gly	Gly	Gly	Ser	Leu	Arg	Arg	Arg	Thr	Lys	Arg	Gln	Asp	Ser	His	930	935	940
Asp	Ser	Val	Ala	Ser	Ala	Ala	Ser	Leu	Lys	Lys	Lys	Gln	Glu	Val	Glu	945	950	955
Gly	Lys	Leu	Ile	Glu	Thr	Glu	Lys	Ser	Gln	Thr	Gly	Gly	Val	Glu	Phe	965	970	975
Ala	Val	Tyr	Lys	His	Tyr	Ile	Lys	Ser	Val	Gly	Ile	Phe	Leu	Ser	Val	980	985	990
Ala	Thr	Leu	Val	Leu	Asn	Phe	Val	Phe	Gln	Ala	Phe	Gln	Ile	Gly	Ser	995	1000	1005
Asn	Leu	Trp	Leu	Thr	Gln	Trp	Ala	Asn	Asp	Gln	Asn	Val	Ala	Asn	Asp	1010	1015	1020
Thr	Gly	Leu	Arg	Asp	Met	Tyr	Leu	Gly	Val	Tyr	Gly	Ala	Phe	Gly	Phe	1025	1030	1035
Gly	Gln	Gly	Val	Leu	Ala	Tyr	Phe	Ala	Val	Val	Ile	Val	Tyr	Leu	Gly	1045	1050	1055
Gly	Phe	Gln	Ala	Ala	Lys	Thr	Ile	His	Asn	Glu	Leu	Leu	Ala	Val	Ile	1060	1065	1070
Ile	Arg	Gly	Ser	Val	Cys	Arg	Phe	Phe	Asp	Ile	Thr	Pro	Ile	Gly	Arg	1075	1080	1085
Leu	Leu	Asn	Ser	Phe	Ser	Gly	Asp	Met	Asp	Val	Val	Asp	Glu	Glu	Leu	1090	1095	1100
Pro	Ala	Thr	Met	Asp	Ser	Phe	Met	Thr	Phe	Ile	Phe	Met	Val	Leu	Ala	1105	1110	1115
Thr	Ile	Val	Val	Ile	Ser	Leu	Ser	Thr	Pro	Ile	Phe	Leu	Ala	Val	Ile	1125	1130	1135
Val	Pro	Ile	Ala	Phe	Leu	Tyr	Tyr	Phe	Ala	Gln	Arg	Phe	Tyr	Val	Ala	1140	1145	1150

Thr Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile
 1155 1160 1165
 Tyr Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala
 1170 1175 1180
 Tyr Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp
 1185 1190 1195 1200
 Lys Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu
 1205 1210 1215
 Ala Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser
 1220 1225 1230
 Leu Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu
 1235 1240 1245
 Ser Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val
 1250 1255 1260
 Arg Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile
 1265 1270 1275 1280
 Lys Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln
 1285 1290 1295
 Asp Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe
 1300 1305 1310
 Gln Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg
 1315 1320 1325
 Gly Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly
 1330 1335 1340
 Arg Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile
 1345 1350 1355 1360
 Ile Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala
 1365 1370 1375
 Ser Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln
 1380 1385 1390
 Asp Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe
 1395 1400 1405
 Glu Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His
 1410 1415 1420
 Leu Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile
 1425 1430 1435 1440
 Ala Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys
 1445 1450 1455

Leu Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu
 1460 1465 1470

Ala Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr
 1475 1480 1485

Ile Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg
 1490 1495 1500

Leu Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly
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Gln Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys
 1525 1530 1535

Ser Ala Phe

<210> 27

<211> 1538

<212> PRT

<213> *Drosophila melanogaster*

<400> 27

Met Ala Asp Asp Thr Ser Ser Pro Met Asp Arg Phe Cys Gly Ser Thr
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Phe Trp Asn Ala Thr Glu Thr Trp Tyr Thr Asn Asp Pro Asp Phe Thr
 20 25 30

Pro Cys Phe Glu Gln Thr Ala Leu Val Trp Thr Pro Cys Ala Phe Tyr
 35 40 45

Trp Ala Phe Val Ile Phe Asp Phe Tyr Tyr Leu Lys Ala Ser Leu Asp
 50 55 60

Arg Asn Ile Pro Trp Asn Lys Leu Asn Val Ser Lys Ala Leu Val Asn
 65 70 75 80

Leu Gly Leu Leu Val Ile Thr Ala Leu Asp Leu Ile Met Ala Leu Val
 85 90 95

Lys Lys Gly Gly Asp Ser Glu Leu Pro Leu Tyr Asp Leu Asp Val Trp
 100 105 110

Gly Pro Ile Ile Lys Phe Ala Thr Phe Leu Leu Leu Phe Ile Phe Ile
 115 120 125

Pro Leu Asn Arg Lys Tyr Gly Val Gln Thr Thr Gly Cys Gln Phe Ile
 130 135 140

Phe Trp Phe Leu Leu Thr Val Leu Ser Ile Pro Arg Cys Arg Thr Glu
 145 150 155 160

Val Arg Leu Asp Ala Glu Arg Gln Lys Ile Leu Asn Ser Gln Gln Pro
 165 170 175

Ser	Glu	Gln	Asp	Phe	Ser	Trp	Glu	Glu	Tyr	Gln	Phe	Val	Ser	Phe	Phe	180	185	190
Ile	Phe	Phe	Thr	Phe	Thr	Ser	Ile	Met	Leu	Ile	Leu	Asn	Cys	Phe	Ala	195	200	205
Asp	Gly	Met	Pro	Arg	Gln	Thr	Lys	Tyr	Gln	Arg	Gly	Glu	Asn	Glu	Ile	210	215	220
Pro	Glu	Leu	Ser	Ala	Ser	Phe	Leu	Ser	Arg	Ile	Thr	Tyr	Gln	Trp	Phe	225	230	235
Asp	Lys	Met	Ala	Leu	Lys	Gly	Tyr	Arg	Asn	Pro	Leu	Glu	Glu	Lys	Asp	245	250	255
Leu	Trp	Asp	Leu	Arg	Pro	Gln	Asp	Ser	Cys	Ser	Glu	Val	Met	Pro	Ile	260	265	270
Phe	Ala	His	His	Trp	Asn	Gln	Asn	Val	Arg	Lys	Asn	Tyr	Lys	Asn	Lys	275	280	285
Ala	Arg	Val	Glu	Pro	Lys	Ala	Gln	Phe	Ser	Asn	Gly	Asn	Val	Thr	Phe	290	295	300
Glu	Asn	Pro	His	Gly	Glu	Lys	Asn	Gly	Arg	Lys	Lys	Gly	Met	Ala	Ser	305	310	315
Ile	Met	Pro	Pro	Ile	Tyr	Lys	Ser	Phe	Gly	Gly	Val	Phe	Leu	Phe	Gly	325	330	335
Ala	Leu	Met	Lys	Leu	Phe	Thr	Asp	Thr	Leu	Thr	Phe	Ala	Gln	Pro	Gln	340	345	350
Val	Leu	Ser	Leu	Ile	Ile	Ser	Phe	Val	Glu	Ala	Gln	Asp	Ala	Glu	Pro	355	360	365
Glu	Trp	Lys	Gly	Ile	Leu	Tyr	Ala	Val	Leu	Leu	Phe	Val	Leu	Ala	Ala	370	375	380
Ala	Gln	Thr	Phe	Ile	Leu	Gly	Gln	Tyr	Phe	His	Arg	Met	Phe	Ile	Val	385	390	395
Gly	Leu	Arg	Ile	Arg	Thr	Ala	Leu	Ile	Asn	Ala	Ile	Tyr	Arg	Lys	Ala	405	410	415
Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile	420	425	430
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr	435	440	445
Tyr	Leu	Asn	Met	Ile	Trp	Ser	Ala	Pro	Leu	Gln	Ile	Gly	Leu	Ala	Leu	450	455	460
Tyr	Phe	Leu	Trp	Gln	Gln	Leu	Gly	Pro	Ser	Val	Leu	Ala	Gly	Leu	Ala	465	470	475
																		480

Val	Met	Ile	Ile	Leu	Ile	Pro	Val	Asn	Gly	Val	Ile	Ala	Ser	Arg	Ile	485	490	495
Lys	Thr	Tyr	Gln	Ile	Arg	Gln	Met	Lys	Tyr	Lys	Asp	Glu	Arg	Val	Lys	500	505	510
Leu	Met	Asn	Glu	Val	Leu	Ser	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	515	520	525
Trp	Glu	Pro	Ser	Phe	Glu	Lys	Gln	Val	Leu	Asp	Ile	Arg	Asp	Lys	Glu	530	535	540
Ile	Ala	Thr	Leu	Arg	Ser	Thr	Ala	Tyr	Leu	Asn	Ala	Gly	Thr	Ser	Phe	545	550	555
Leu	Trp	Ser	Cys	Ala	Pro	Phe	Leu	Val	Ser	Leu	Val	Thr	Phe	Ala	Thr	565	570	575
Tyr	Val	Leu	Ile	Asp	Glu	Asn	Asn	Val	Leu	Asp	Ala	Thr	Lys	Thr	Phe	580	585	590
Val	Ser	Leu	Ser	Leu	Phe	Asn	Ile	Leu	Arg	Phe	Pro	Leu	Thr	Met	Leu	595	600	605
Pro	Met	Leu	Ile	Thr	Asn	Leu	Val	Gln	Thr	Gln	Val	Ser	Val	Asn	Arg	610	615	620
Ile	Asn	Lys	Phe	Leu	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Ser	Val	Leu	625	630	635
His	Asp	Ser	Ser	Lys	Pro	His	Pro	Met	Ser	Ile	Glu	Asn	Gly	Glu	Phe	645	650	655
Ser	Trp	Gly	Asp	Glu	Ile	Thr	Leu	Arg	Asn	Ile	Asn	Ile	Glu	Val	Lys	660	665	670
Lys	Gly	Ser	Leu	Val	Ala	Leu	Val	Gly	Thr	Val	Gly	Ser	Gly	Lys	Ser	675	680	685
Ser	Val	Val	Gln	Ala	Phe	Leu	Gly	Glu	Met	Glu	Lys	Leu	Ala	Gly	Val	690	695	700
Val	Asn	Thr	Val	Gly	Lys	Leu	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	705	710	715
Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp	725	730	735
Arg	Lys	Arg	Tyr	Asn	Lys	Val	Ile	Asp	Ala	Cys	Ala	Leu	Arg	Ala	Asp	740	745	750
Ile	Asp	Ile	Leu	Ser	Ala	Gly	Asp	Leu	Thr	Glu	Ile	Gly	Glu	Lys	Gly	755	760	765
Ile	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	Arg	Ile	Ser	Leu	Ala	Arg	Ala	770	775	780

Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala	785	790	795	800
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro	805	810	815	
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val	820	825	830	
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu	835	840	845	
Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala	850	855	860	
Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu	865	870	875	880
Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val	885	890	895	
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr	900	905	910	
Glu	Ser	Leu	Ser	Asp	Ser	Ile	Ser	Val	Thr	Ser	Ala	Asp	Ser	Leu	Met	915	920	925	
Gly	Gly	Gly	Gly	Ser	Leu	Arg	Arg	Arg	Thr	Lys	Arg	Gln	Asp	Ser	His	930	935	940	
Asp	Ser	Val	Ala	Ser	Ala	Ala	Ser	Leu	Lys	Lys	Lys	Gln	Glu	Val	Glu	945	950	955	960
Gly	Lys	Leu	Ile	Glu	Thr	Glu	Lys	Ser	Gln	Thr	Gly	Gly	Val	Glu	Phe	965	970	975	
Ala	Val	Tyr	Lys	His	Tyr	Ile	Lys	Ser	Val	Gly	Ile	Phe	Leu	Ser	Val	980	985	990	
Ala	Thr	Leu	Val	Leu	Asn	Phe	Val	Phe	Gln	Ala	Phe	Gln	Ile	Gly	Ser	995	1000	1005	
Asn	Leu	Trp	Leu	Thr	Gln	Trp	Ala	Asn	Asp	Gln	Asn	Val	Ala	Asn	Asp	1010	1015	1020	
Thr	Gly	Leu	Arg	Asp	Met	Tyr	Leu	Gly	Val	Tyr	Gly	Ala	Phe	Gly	Phe	1025	1030	1035	1040
Gly	Gln	Gly	Leu	Cys	Asn	Tyr	Gly	Ala	Ala	Ile	Ser	Leu	Phe	Thr	Ala	1045	1050	1055	
Thr	Leu	His	Ala	Ser	Ser	Arg	Val	Phe	His	Arg	Leu	Phe	Asn	Asn	Ile	1060	1065	1070	
Met	His	Cys	Pro	Ser	Glu	Phe	Phe	Asp	Thr	Thr	Pro	Lys	Gly	Arg	Ile	1075	1080	1085	

Leu Asp Arg Cys Ser Ser Asp Val Asn Cys Leu Asp Leu Val Met Pro
 1090 1095 1100
 Leu Asn Ile Arg Met Val Met Ser Thr Ala Phe Gln Val Leu Ala Thr
 1105 1110 1115 1120
 Ile Val Val Ile Ser Leu Ser Thr Pro Ile Phe Leu Ala Val Ile Val
 1125 1130 1135
 Pro Ile Ala Phe Leu Tyr Tyr Phe Ala Gln Arg Phe Tyr Val Ala Thr
 1140 1145 1150
 Ser Arg Gln Leu Met Arg Leu Glu Ser Val Ser Arg Ser Pro Ile Tyr
 1155 1160 1165
 Ser His Phe Ser Glu Thr Val Thr Gly Ala Ser Thr Ile Arg Ala Tyr
 1170 1175 1180
 Asn Val Gly Asp Arg Phe Ile Glu Glu Ser Asp Ala Lys Val Asp Lys
 1185 1190 1195 1200
 Asn Gln Val Cys Lys Tyr Pro Ser Val Ile Ala Asn Arg Trp Leu Ala
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 Ile Arg Leu Glu Met Val Gly Asn Leu Ile Ile Leu Phe Ala Ser Leu
 1220 1225 1230
 Phe Ala Val Leu Gly Gly Gln Thr Asn Pro Gly Leu Val Gly Leu Ser
 1235 1240 1245
 Val Ser Tyr Ala Leu Gln Val Thr Gln Thr Leu Asn Trp Leu Val Arg
 1250 1255 1260
 Met Ser Ser Asp Ile Glu Thr Asn Ile Val Ser Val Glu Arg Ile Lys
 1265 1270 1275 1280
 Glu Tyr Gly Glu Thr Lys Gln Glu Ala Pro Trp Glu Leu Glu Gln Asp
 1285 1290 1295
 Lys Asn Lys Pro Lys Asn Trp Pro Gln Glu Gly Arg Val Glu Phe Gln
 1300 1305 1310
 Asn Phe Gln Val Arg Tyr Arg Glu Gly Leu Asp Leu Val Leu Arg Gly
 1315 1320 1325
 Val Ser Phe Asn Ile Gln Gly Gly Glu Lys Val Gly Ile Val Gly Arg
 1330 1335 1340
 Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu Ala Leu Phe Arg Ile Ile
 1345 1350 1355 1360
 Glu Ala Ala Gly Gly Arg Ile Ser Ile Asp Gly Val Asp Ile Ala Ser
 1365 1370 1375
 Met Gly Leu His Met Leu Arg Ser Arg Leu Thr Ile Ile Pro Gln Asp
 1380 1385 1390

Pro Val Leu Phe Ser Gly Ser Leu Arg Ile Asn Leu Asp Pro Phe Glu
 1395 1400 1405

Ile Lys Thr Asp Asp Glu Ile Trp Lys Ala Leu Glu Leu Ser His Leu
 1410 1415 1420

Lys Ser Phe Val Lys Ser Leu Ala Ala Gly Leu Asn His Glu Ile Ala
 1425 1430 1435 1440

Glu Gly Gly Glu Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu
 1445 1450 1455

Ala Arg Ala Leu Leu Arg Lys Thr Lys Val Leu Val Leu Asp Glu Ala
 1460 1465 1470

Thr Ala Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Lys Thr Ile
 1475 1480 1485

Arg Thr Glu Phe Lys Glu Cys Thr Val Leu Thr Ile Ala His Arg Leu
 1490 1495 1500

Asn Thr Ile Leu Asp Ser Asp Lys Val Ile Val Leu Asp Lys Gly Gln
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Ile Ile Glu Phe Ala Ser Pro Thr Glu Leu Leu Asp Asn Pro Lys Ser
 1525 1530 1535

Ala Phe

<210> 28

<211> 1548

<212> PRT

<213> *Drosophila melanogaster*

<400> 28

Met Ala Asp Asp Thr Ser Ser Pro Met Asp Arg Phe Cys Gly Ser Thr
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Phe Trp Asn Ala Thr Glu Thr Trp Tyr Thr Asn Asp Pro Asp Phe Thr
 20 25 30

Pro Cys Phe Glu Gln Thr Ala Leu Val Trp Thr Pro Cys Ala Phe Tyr
 35 40 45

Trp Ala Phe Val Ile Phe Asp Phe Tyr Tyr Leu Lys Ala Ser Leu Asp
 50 55 60

Arg Asn Ile Pro Trp Asn Lys Leu Asn Val Ser Lys Ala Leu Val Asn
 65 70 75 80

Leu Gly Leu Leu Val Ile Thr Ala Leu Asp Leu Ile Met Ala Leu Val
 85 90 95

Lys Lys Gly Gly Asp Ser Glu Leu Pro Leu Tyr Asp Leu Asp Val Trp
 100 105 110

Gly 110	Pro 111	Ile 115	Ile 116	Lys 117	Phe 118	Ala 119	Thr 120	Phe 121	Leu 122	Leu 123	Leu 124	Phe 125	Ile 126	Phe 127	Ile 128
Pro 130	Leu 131	Asn 132	Arg 133	Lys 134	Tyr 135	Gly 136	Val 137	Gln 138	Thr 139	Thr 140	Gly 141	Cys 142	Gln 143	Phe 144	Ile 145
Phe 145	Trp 146	Phe 147	Leu 148	Leu 149	Thr 150	Val 151	Leu 152	Ser 153	Ile 154	Pro 155	Arg 156	Cys 157	Arg 158	Thr 159	Glu 160
Val 165	Arg 166	Leu 167	Asp 168	Ala 169	Glu 170	Arg 171	Gln 172	Lys 173	Ile 174	Leu 175	Asn 176	Ser 177	Gln 178	Gln 179	Pro 180
Ser 185	Glu 186	Gln 187	Asp 188	Phe 189	Ser 190	Trp 191	Glu 192	Glu 193	Tyr 194	Gln 195	Phe 196	Val 197	Ser 198	Phe 199	Phe 200
Ile 205	Phe 206	Phe 207	Thr 208	Phe 209	Thr 210	Ser 211	Ile 212	Met 213	Leu 214	Ile 215	Leu 216	Asn 217	Cys 218	Phe 219	Ala 220
Asp 225	Gly 226	Met 227	Pro 228	Arg 229	Gln 230	Thr 231	Lys 232	Tyr 233	Gln 234	Arg 235	Gly 236	Glu 237	Asn 238	Glu 239	Ile 240
Pro 245	Glu 246	Leu 247	Ser 248	Ala 249	Ser 250	Phe 251	Leu 252	Ser 253	Arg 254	Ile 255	Thr 256	Tyr 257	Gln 258	Trp 259	Phe 260
Asp 265	Lys 266	Met 267	Ala 268	Leu 269	Lys 270	Gly 271	Tyr 272	Arg 273	Asn 274	Pro 275	Leu 276	Glu 277	Glu 278	Lys 279	Asp 280
Leu 285	Trp 286	Asp 287	Leu 288	Arg 289	Pro 290	Gln 291	Asp 292	Ser 293	Cys 294	Ser 295	Glu 296	Val 297	Met 298	Pro 299	Ile 300
Phe 305	Ala 306	His 307	His 308	Trp 309	Asn 310	Gln 311	Asn 312	Val 313	Arg 314	Lys 315	Asn 316	Tyr 317	Lys 318	Asn 319	Lys 320
Ala 325	Arg 326	Val 327	Glu 328	Pro 329	Lys 330	Ala 331	Gln 332	Phe 333	Ser 334	Asn 335	Gly 336	Asn 337	Val 338	Thr 339	Phe 340
Glu 345	Asn 346	Pro 347	His 348	Gly 349	Glu 350	Lys 351	Asn 352	Gly 353	Arg 354	Lys 355	Lys 356	Gly 357	Met 358	Ala 359	Ser 360
Ile 365	Met 366	Pro 367	Pro 368	Ile 369	Tyr 370	Lys 371	Ser 372	Phe 373	Gly 374	Gly 375	Val 376	Phe 377	Leu 378	Phe 379	Gly 380
Ala 385	Leu 386	Met 387	Lys 388	Leu 389	Phe 390	Thr 391	Asp 392	Thr 393	Leu 394	Thr 395	Phe 396	Ala 397	Gln 398	Pro 399	Gln 400
Val 405	Leu 406	Ser 407	Leu 408	Ile 409	Ile 410	Ser 411	Phe 412	Val 413	Glu 414	Ala 415	Gln 416	Asp 417	Ala 418	Glu 419	Pro 420
Glu 425	Trp 426	Lys 427	Gly 428	Ile 429	Leu 430	Tyr 431	Ala 432	Val 433	Leu 434	Leu 435	Phe 436	Val 437	Leu 438	Ala 439	Ala 440
Ala 445	Gln 446	Thr 447	Phe 448	Ile 449	Leu 450	Gly 451	Gln 452	Tyr 453	Phe 454	His 455	Arg 456	Met 457	Phe 458	Ile 459	Val 460
Gly 465	Leu 466	Arg 467	Ile 468	Arg 469	Thr 470	Ala 471	Leu 472	Ile 473	Asn 474	Ala 475	Ile 476	Tyr 477	Arg 478	Lys 479	Ala 480

Leu	Arg	Ile	Ser	Asn	Ser	Thr	Lys	Lys	Glu	Ser	Thr	Val	Gly	Glu	Ile	420	425	430
Val	Asn	Leu	Met	Ala	Val	Asp	Ala	Gln	Arg	Phe	Met	Glu	Leu	Thr	Thr	435	440	445
Tyr	Leu	Asn	Met	Ile	Trp	Ser	Ala	Pro	Leu	Gln	Ile	Gly	Leu	Ala	Leu	450	455	460
Tyr	Phe	Leu	Trp	Gln	Gln	Leu	Gly	Pro	Ser	Val	Leu	Ala	Gly	Leu	Ala	465	470	475
Val	Met	Ile	Ile	Leu	Ile	Pro	Val	Asn	Gly	Val	Ile	Ala	Ser	Arg	Ile	485	490	495
Lys	Thr	Tyr	Gln	Ile	Arg	Gln	Met	Lys	Tyr	Lys	Asp	Glu	Arg	Val	Lys	500	505	510
Leu	Met	Asn	Glu	Val	Leu	Ser	Gly	Ile	Lys	Val	Leu	Lys	Leu	Tyr	Ala	515	520	525
Trp	Glu	Pro	Ser	Phe	Glu	Lys	Gln	Val	Leu	Asp	Ile	Arg	Asp	Lys	Glu	530	535	540
Ile	Ala	Thr	Leu	Arg	Ser	Thr	Ala	Tyr	Leu	Asn	Ala	Gly	Thr	Ser	Phe	545	550	555
Leu	Trp	Ser	Cys	Ala	Pro	Phe	Leu	Val	Ser	Leu	Val	Thr	Phe	Ala	Thr	565	570	575
Tyr	Val	Leu	Ile	Asp	Glu	Asn	Asn	Val	Leu	Asp	Ala	Thr	Lys	Thr	Phe	580	585	590
Val	Ser	Leu	Ser	Leu	Phe	Asn	Ile	Leu	Arg	Phe	Pro	Leu	Thr	Met	Leu	595	600	605
Pro	Met	Leu	Ile	Thr	Asn	Leu	Val	Gln	Thr	Gln	Val	Ser	Val	Asn	Arg	610	615	620
Ile	Asn	Lys	Phe	Leu	Asn	Ser	Glu	Glu	Leu	Asp	Pro	Asn	Ser	Val	Leu	625	630	635
His	Asp	Ser	Ser	Lys	Pro	His	Pro	Met	Ser	Ile	Glu	Asn	Gly	Glu	Phe	645	650	655
Ser	Trp	Gly	Asp	Glu	Ile	Thr	Leu	Arg	Asn	Ile	Asn	Ile	Glu	Val	Lys	660	665	670
Lys	Gly	Ser	Leu	Val	Ala	Leu	Val	Gly	Thr	Val	Gly	Ser	Gly	Lys	Ser	675	680	685
Ser	Val	Val	Gln	Ala	Phe	Leu	Gly	Glu	Met	Glu	Lys	Leu	Ala	Gly	Val	690	695	700
Val	Asn	Thr	Val	Gly	Lys	Leu	Ala	Tyr	Val	Pro	Gln	Gln	Ala	Trp	Ile	705	710	715
																		720

Gln	Asn	Ala	Thr	Val	Arg	Asp	Asn	Ile	Leu	Phe	Gly	Gln	Thr	Tyr	Asp		
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			740					745					750				
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		755					760					765					
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	770					775					780						
Val	Tyr	Ser	Asp	Ala	Asp	Leu	Tyr	Leu	Leu	Asp	Asp	Pro	Leu	Ser	Ala		
785					790					795					800		
Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	Phe	Glu	Glu	Val	Ile	Gly	Pro		
				805					810					815			
Lys	Gly	Ile	Leu	Ala	Arg	Lys	Ser	Arg	Val	Leu	Val	Thr	His	Gly	Val		
			820					825					830				
Thr	Phe	Leu	Pro	Gln	Val	Asp	Ser	Ile	Tyr	Val	Ile	Lys	Met	Gly	Glu		
		835					840					845					
Ile	Ser	Glu	Ser	Gly	Thr	Phe	Asp	Gln	Leu	Val	Lys	Asn	Lys	Gly	Ala		
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Phe	Ala	Asp	Phe	Ile	Ile	Gln	His	Leu	Gln	Glu	Gly	Asn	Glu	Glu	Glu		
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Glu	Glu	Leu	Asn	Gln	Ile	Lys	Arg	Gln	Ile	Ser	Ser	Thr	Ala	Asp	Val		
				885					890					895			
Pro	Glu	Leu	Leu	Gly	Thr	Val	Glu	Lys	Ala	Ile	Lys	Leu	Ala	Arg	Thr		
			900					905					910				
Glu	Ser	Leu	Ser	Asp	Ser	Ile	Ser	Val	Thr	Ser	Ala	Asp	Ser	Leu	Met		
		915					920					925					
Gly	Gly	Gly	Gly	Ser	Leu	Arg	Arg	Arg	Thr	Lys	Arg	Gln	Asp	Ser	His		
	930					935					940						
Asp	Ser	Val	Ala	Ser	Ala	Ala	Ser	Leu	Lys	Lys	Lys	Gln	Glu	Val	Glu		
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			980					985					990				
Ala	Thr	Leu	Val	Leu	Asn	Phe	Val	Phe	Gln	Ala	Phe	Gln	Ile	Gly	Ser		
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 1330 1335 1340
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Gln

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Gln

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20 25 30

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Gln

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Glu Phe Asp Leu Asn Ala Ser Arg Leu Phe Ser Ser Leu Ala Leu Phe
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Gln Gln Leu Thr Val Pro Leu Leu Ile Phe Pro Ile Thr Val Pro Ile
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Ile Ile Ala
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Pro Met Ser Phe Phe Glu Arg Thr Pro Ser Gly Asn Leu Val Asn Arg
35 40 45

Phe Ser Lys Glu Leu Asp Thr Val Asp Ser Met Ile Pro Glu Val Ile
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Lys Met Phe Met Gly Ser Leu Phe Asn
 65 70

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<212> PRT

<213> Homo sapiens

<400> 136

Ile Phe Val Phe Ile Ala His Phe Trp Ser Ala Phe Gly Phe Val His
 1 5 10 15

Ala Ser Asn Ile Leu His Lys Gln Leu Leu Asn Asn Ile Leu Arg Ala
 20 25 30

Pro Met Arg Phe Phe Asp Thr Thr Pro Thr Gly Arg Ile Val Asn Arg
 35 40 45

Phe Ala Gly Asp Ile Ser Thr Val Asp Asp Thr Leu Pro Gln Ser Leu
 50 55 60

Arg Ser Trp Ile Thr Cys Phe Leu Gly
 65 70

<210> 137

<211> 73

<212> PRT

<213> Homo sapiens

<400> 137

Phe Leu Val Met Leu Ala Ala Met Ala Met Ala Ala Gly Gly Ile Gln
 1 5 10 15

Ala Ala Arg Val Leu His Gln Ala Leu Leu His Asn Lys Ile Arg Ser
 20 25 30

Pro Gln Ser Phe Phe Asp Thr Thr Pro Ser Gly Arg Ile Leu Asn Cys
 35 40 45

Phe Ser Lys Asp Ile Tyr Val Val Asp Glu Val Leu Ala Pro Val Ile
 50 55 60

Leu Met Leu Leu Asn Ser Phe Phe Asn
 65 70

<210> 138

<211> 69

<212> PRT

<213> Drosophila melanogaster

<400> 138

Val Ser Thr Pro Ala Gly Gln Tyr Ala Gly Cys Asn Ala Arg Arg Asn
 1 5 10 15

Leu His Asp Lys Leu Leu Gln Thr Ile Leu His Lys Thr Leu His Phe
 20 25 30

Phe Gln Val Thr Pro Leu Gly Arg Ile Val Asn Arg Phe Ser Asn Asp
 35 40 45

Met Ala Val Ile Asp Lys Lys Ile Ala Ala Thr Gly Gln Phe Thr Leu
 50 55 60

Arg Leu Leu Gln Leu
 65

<210> 139

<211> 72

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Consensus
 sequence for ABC transporter membrane spanning
 domain

<400> 139

Leu Leu Gln Gly Ser Phe Tyr Leu Gly Glu Arg Leu Gly Gln Arg Leu
 1 5 10 15

Arg Lys Arg Leu Phe Arg Ala Leu Leu Arg Gln Ile Leu Gly Leu Phe
 20 25 30

Met Ser Phe Phe Asp Thr Asn Ser Thr Gly Glu Leu Thr Ser Arg Leu
 35 40 45

Thr Asn Asp Val Ser Lys Ile Arg Asp Gly Leu Gly Glu Lys Leu Gly
 50 55 60

Leu Leu Phe Gln Ser Leu Ala Thr
 65 70